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APPENDIX

Table of Contents

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1 Introduction

1.1 Organization of this Document

This document consists of 13 major sections and can be navigated using the links in the Table of Contents.

1. Introduction - summarizes the overall purpose and structure of the functional specification document
2. Methodology – provides the methodology followed in developing these functional specifications.
3. Architecture Components Diagram – identifies and defines the major components of the system
4. Systems Identified – identifies and defines systems and their components
5. Business Use Cases – use cases for the system and actors identified
6. Business Data Objects – lists all the business data objects identified through the use cases
7. Interaction Diagrams – collaboration diagrams
8. Class Diagrams – class diagrams based on the collaboration diagrams developed
9. State and Activity Diagrams – state and activity diagrams
10. System Requirements – system requirements identified for the prototype and for the "ideal" system
11. Assumptions – summary of assumptions identified in the use cases
12. Terminology – terminology definitions
13. Appendixes – clarifications from FSTC

1.2 Purpose

The purpose of this document is to provide the reader the system requirements and specifications for the proposed Intercomputer Demo System.

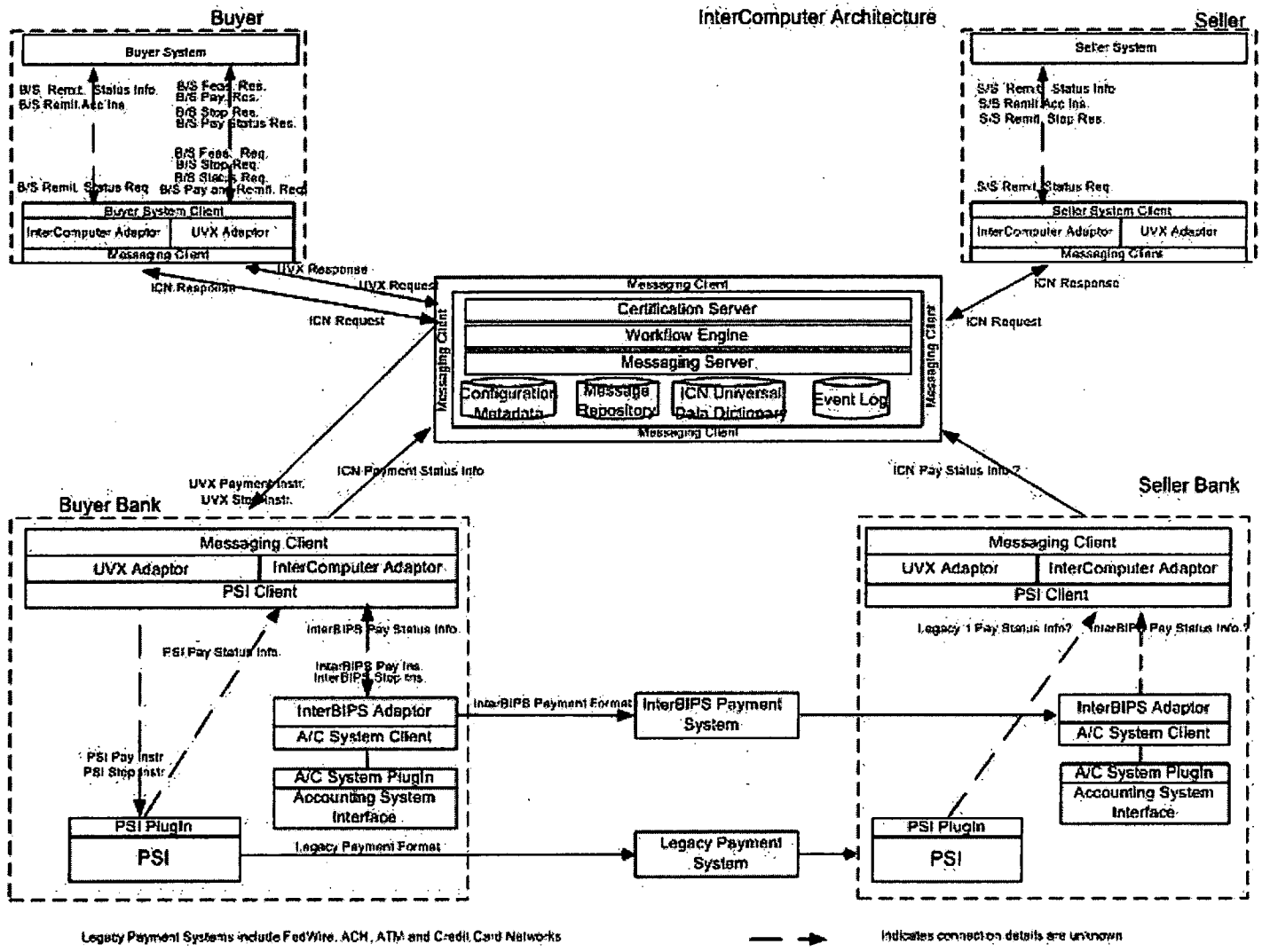
This document will provide the foundation for technical design.

The intended audience will include the Functional, Engineering and QA teams, and potential users of the system.

2 Methodology

The functional specifications document is developed as per the UML 1.3 specification

3 Architecture Components Diagram



3.1 Definition of Components Identified

3.1.1 UVX Adaptor at Buyer

The UVX Adaptor at Buyer handles data mapping and transformations between the UVX data format and the Buyer System data format. The UVX Adaptor at Buyer receives data in the Buyer System data format and UVX data format. The UVX Adaptor at Buyer delivers data in the Buyer System data format and UVX data format.

3.1.2 UVX Adaptor at Seller

The UVX Adaptor at Seller handles data mapping and transformations between the UVX data format and the Seller System data format. The UVX Adaptor at Seller receives data in the Seller System data format and UVX data format. The UVX Adaptor at Buyer delivers data in the Seller System data format and UVX data format.

3.1.3 ICN Universal Data Dictionary

The ICN Universal Data Dictionary defines both the UVX messaging set and the ICN messaging set. The ICN Universal Data Dictionary defines mapping and conversion information between internal and external data formats. Internal data formats are UVX and ICN. The different Buyer Systems, Seller Systems and Payment System Interfaces define external data formats.

3.1.4 UVX Adaptor at the Buyer Bank

The UVX Adaptor at Buyer Bank handles data mapping and transformations between the UVX data format and the Payment System interface data format. The UVX Adaptor at Buyer Bank delivers *Payment* and *Stop Instructions* to the Payment System Interface in the appropriate payment system format.

3.1.5 Workflow Engine

The Workflow Engine defines and executes different workflows. The Workflow Engine creates UVX and ICN Business Data objects based on the ICN Data Dictionary definitions. The Workflow Engine handles mapping and conversion between business data objects. The Workflow Engine executes data validation and business validation rules. The Workflow Engine creates *Events*.

3.1.6 Messaging Server

The Messaging Server receives and routes messages between the Adaptors and the Workflow Engine. The Messaging Server creates *Events*.

3.1.7 Event Log

The Event Log stores *InterComputer Events* created by the Workflow Engine and the Messaging Server.

3.1.8 Message Repository

The Message Repository stores all messages created by the Platform.

3.1.9 Configuration Metadata

The Configuration Metadata stores configuration metadata.

3.1.10 Certification Server

The Certification Server handles digital signature verification of Messages.

3.1.11 InterBIPS Adaptor at the Buyer Bank

The InterBIPS Adaptor at the Buyer Bank accepts *Instructions* from the UVX Adaptor. The InterBIPS Adaptor provides *Accounting Instructions* to the Accounting System Interface at the Buyer Bank. The InterBIPS Adaptor provides *Payment Status information* to the InterComputer Adaptor. The InterBIPS Adaptor at the Buyer Bank transforms data from the InterBIPS data format to the Accounting System Interface data format.

3.1.12 InterBIPS Adaptor at the Seller Bank

The InterBIPS Adaptor at the Seller Bank provides *Accounting Instructions* to the Accounting System Interface at the Seller Bank. . The InterBIPS Adaptor at the Seller Bank transforms data from the InterBIPS data format to the Accounting System Interface data format.

3.1.13 InterBIPS Payment System
The InterBIPS Payment System receives *InterBIPS Instructions*. The InterBIPS Payment System routes *Instructions* to the destination InterBIPS Adaptor.

3.1.14 Buyer System (B/S)
The B/S is the system that the Buyer interacts with. The B/S interacts with the Intercomputer Network.

3.1.15 Seller System (S/S)
The S/S is the system that the Seller interacts with. The S/S interacts with the Intercomputer Network

3.1.16 InterComputer Adaptor at Buyer
The InterComputer Adaptor at Buyer handles data mapping and transformations between the InterComputer data format and the Buyer System data format. The InterComputer Adaptor at Buyer receives data in the Buyer System format and in ICN data format. The InterComputer Adaptor at Buyer delivers data in the Buyer System format and ICN data format.

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3.1.17 InterComputer Adaptor at Seller
The InterComputer Adaptor at Seller handles data mapping and transformations between the InterComputer data format and the Seller System data format. The InterComputer Adaptor at Seller delivers data in the appropriate Seller System format and ICN data format. The InterComputer Adaptor at Seller receives data in the appropriate Seller System format and the ICN data format.

3.1.18 InterComputer Adaptor at the Buyer Bank
The InterComputer Adaptor at Buyer Bank handles data mapping and transformations between the InterComputer data format and the Payment System interface data format. The InterComputer Adaptor at the Buyer Bank receives *Payment Status Information* from the Payment System Interface in the appropriate payment system format

4 Systems Identified

The following Systems have been identified

1. InterComputer Network
2. InterComputer Network Platform
3. ICN Server
4. InterBIPS
5. Buyer System
6. Seller System
7. Messaging System
8. Bank PSI

4.1 Definition of Systems

4.1.1 Intercomputer Network

The Intercomputer Network is composed of the ICN Platform and the InterBIPS Platform.

4.1.2 ICN Platform

The ICN Platform handles all the UVX and ICN transactions. The ICN Platform is a subsystem of the Intercomputer Network.

4.1.3 ICN Server

An ICN Server is a subset of the ICN Platform

4.1.4 InterBIPS

The InterBIPS Platform handles all InterBIPS transactions.

4.1.5 Buyer System (B/S)

The B/S is the system that the Buyer interacts with. The B/S interacts with the Intercomputer Network.

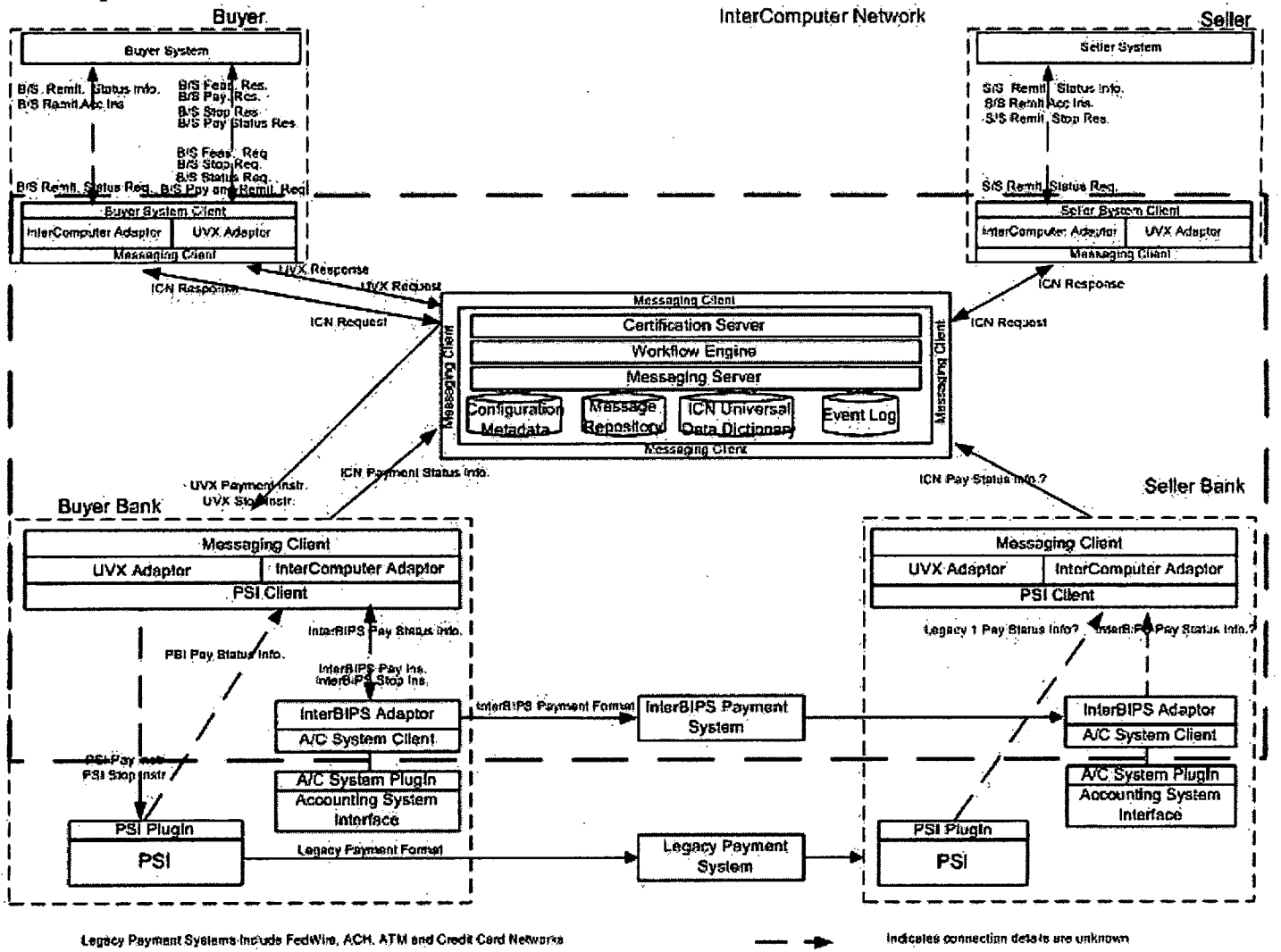
4.1.6 Seller System (S/S)

The S/S is the system that the Seller interacts with. The S/S interacts with the Intercomputer Network.

4.1.7 Messaging System
The Messaging System is a subsystem of the ICN Platform

4.1.8 Bank PSI
The components of the Bank Payment System Interface are the Bank Legacy Systems, InterBIPS Adaptor and the Accounting System Interface.

4.2 Intercomputer Network



The Intercomputer Network has the following components

4.2.1 UVX Adaptor at Buyer

4.2.2 UVX Adaptor at Seller

4.2.3 ICN Universal Data Dictionary

4.2.4 UVX Adaptor at the Buyer Bank

4.2.5 Workflow Engine

4.2.6 Messaging Server

4.2.7 Event Log

4.2.8 Message Repository

4.2.9 Configuration Metadata

4.2.10 Certification Server

4.2.11 InterBIPS Adaptor at the Buyer Bank

4.2.12 InterBIPS Adaptor at the Seller Bank

4.2.13 InterBIPS Payment System

4.2.14 InterComputer Adaptor at Buyer

4.2.15 InterComputer Adaptor at Seller

4.2.16 InterComputer Adaptor at the Buyer Bank

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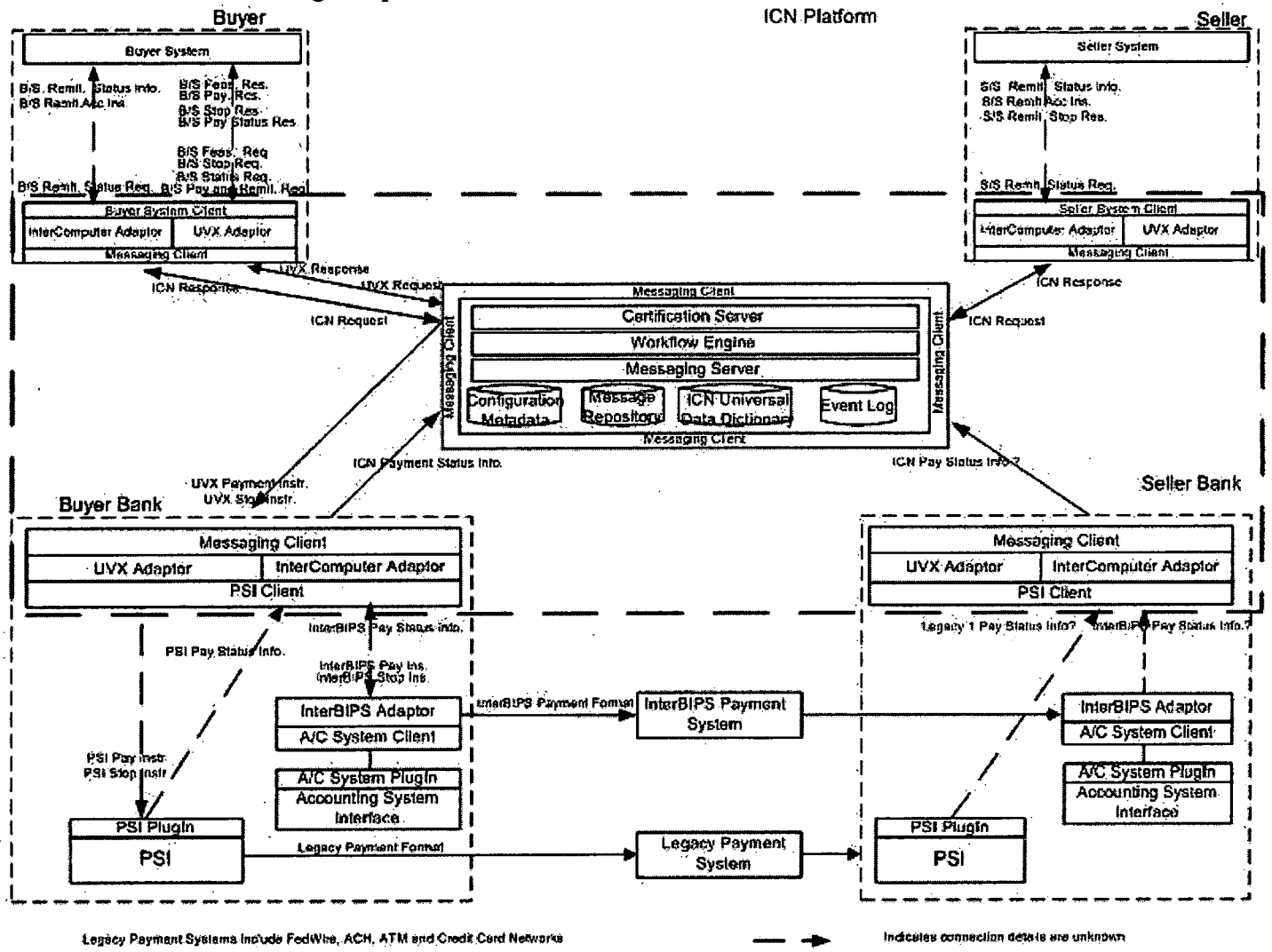
4.3 ICN Platform

The ICN Platform has the following components



4.3.1 UVX Adaptor at Buyer

4.3.2 UVX Adaptor at Seller

4.3.3 ICN Universal Data Dictionary

4.3.4 UVX Adaptor at the Buyer Bank

4.3.5 Workflow Engine

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4.3.6 Messaging Server

4.3.7 Event Log

4.3.8 Message Repository

4.3.9 Configuration Metadata

4.3.10 Certification Server

4.3.11 InterComputer Adaptor at Buyer

4.3.12 InterComputer Adaptor at Seller

4.3.13 InterComputer Adaptor at the Buyer Bank

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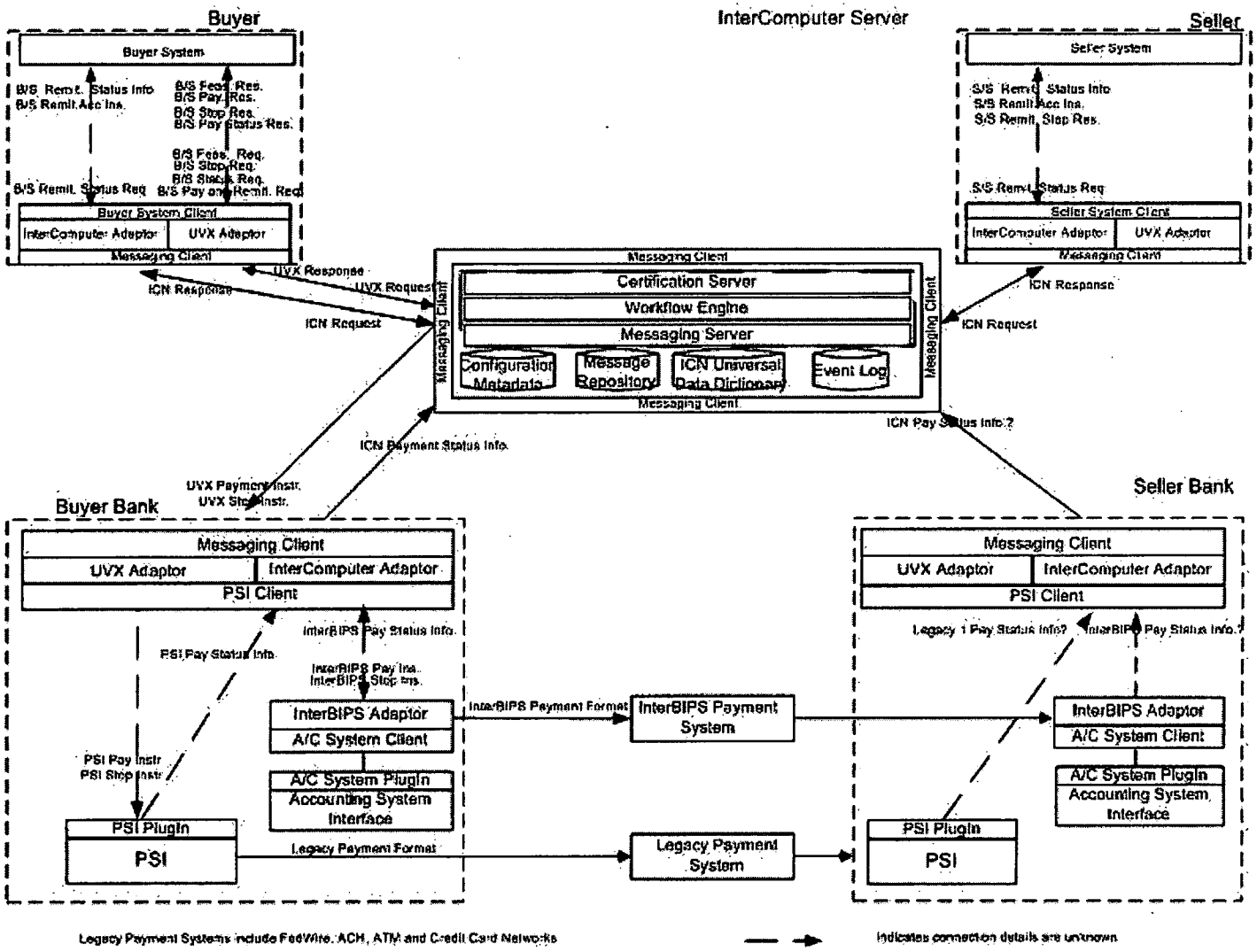
4.4 ICN Server



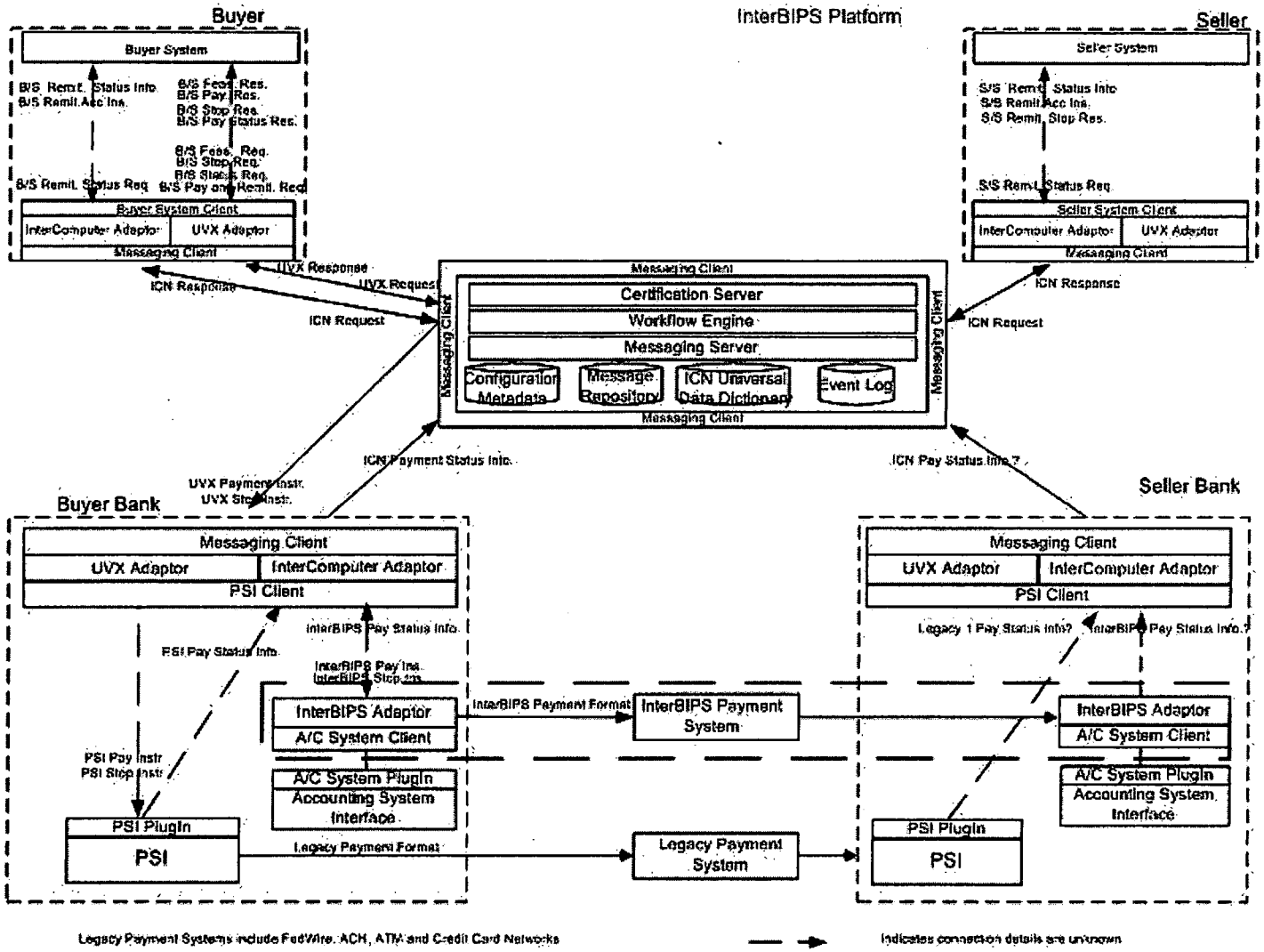
The ICN Server has the following components

4.4.1 Workflow Engine

4.4.2 Messaging Server

4.4.3 Certification Server

4.5 InterBIPS



The InterBIPS Platform has the following components

4.5.1 InterBIPS Adaptor at the Buyer Bank

4.5.2 InterBIPS Adaptor at the Seller Bank

4.5.3 InterBIPS Payment System

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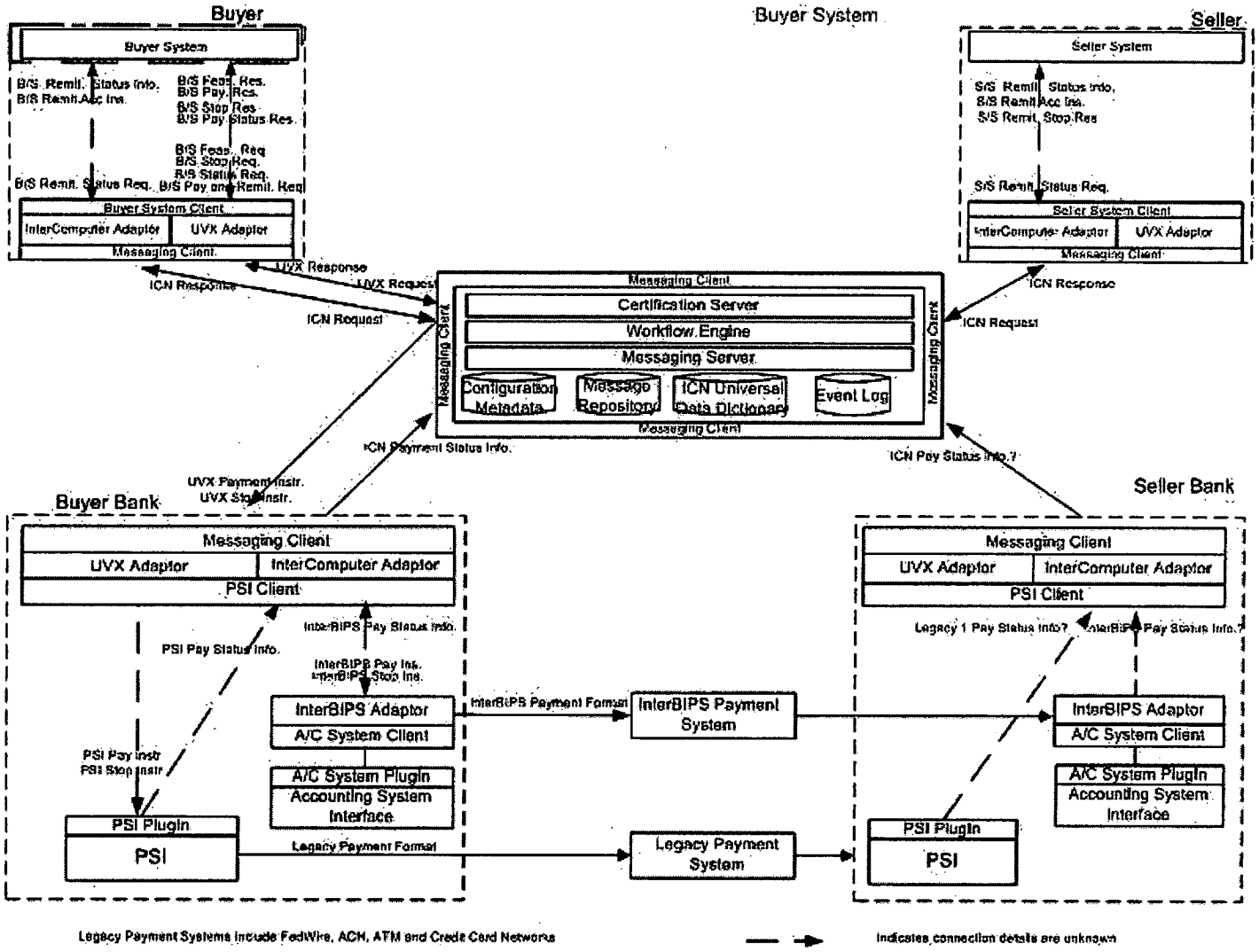
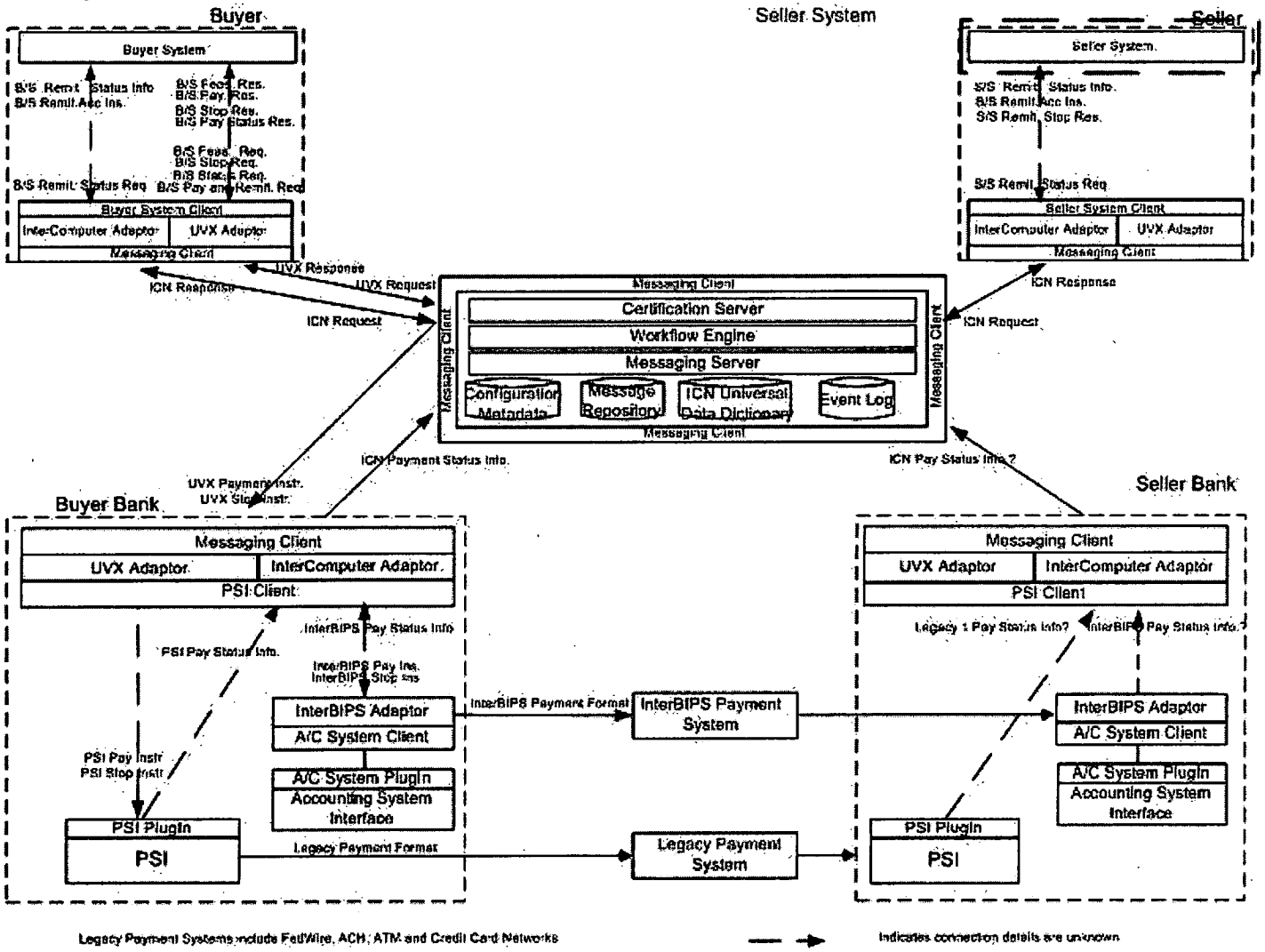
4.6 Buyer System



The Buyer System consists of the following components

4.6.1 Buyer System (B/S)

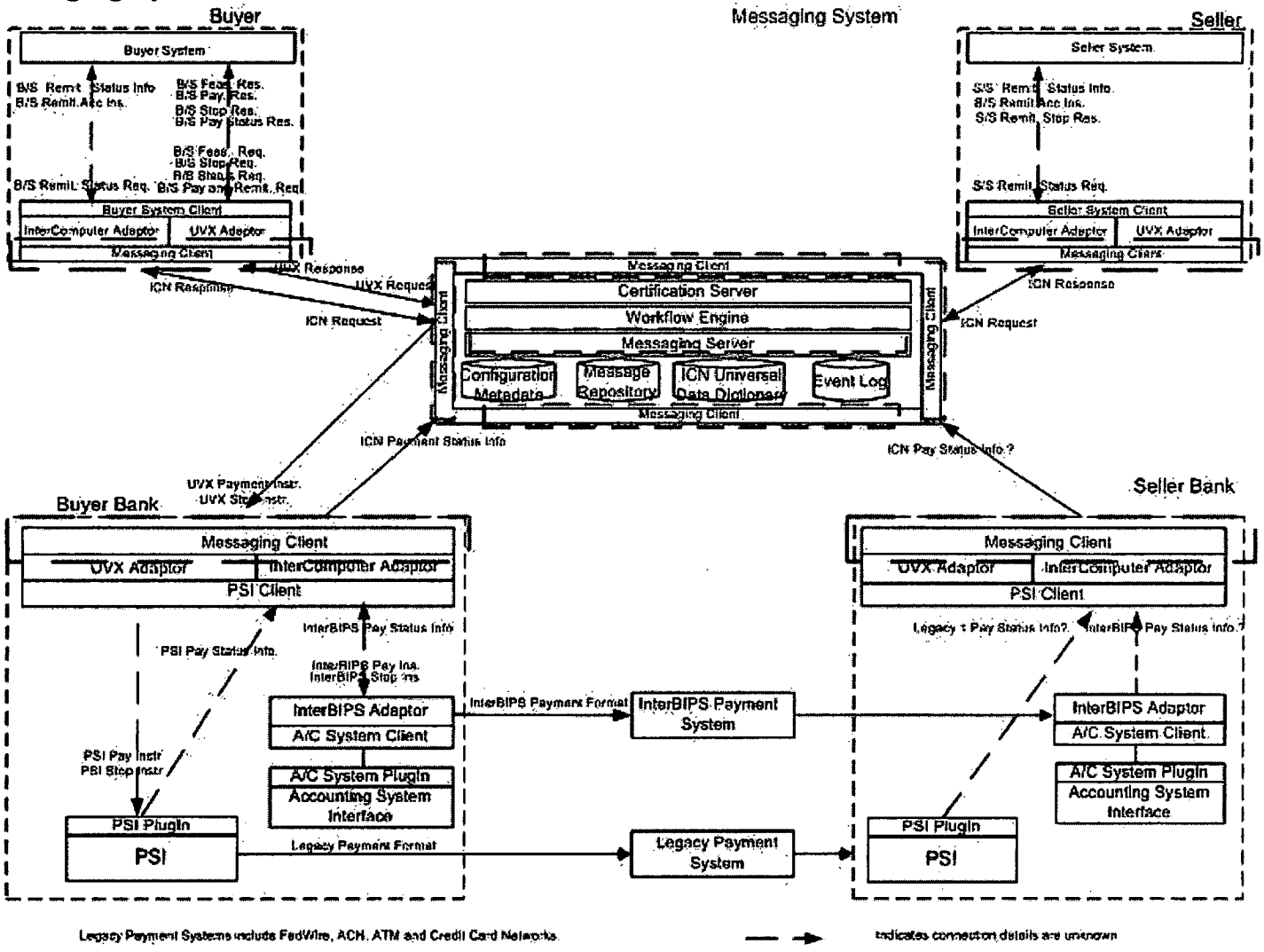
4.7 Seller System



The seller System consists of the following components

4.7.1 Seller System

4.8 Messaging System



The UVX Messaging System has the following components

4.8.1 Messaging Server

4.8.2 UVX Adaptor at Buyer

4.8.3 UVX Adaptor at Seller

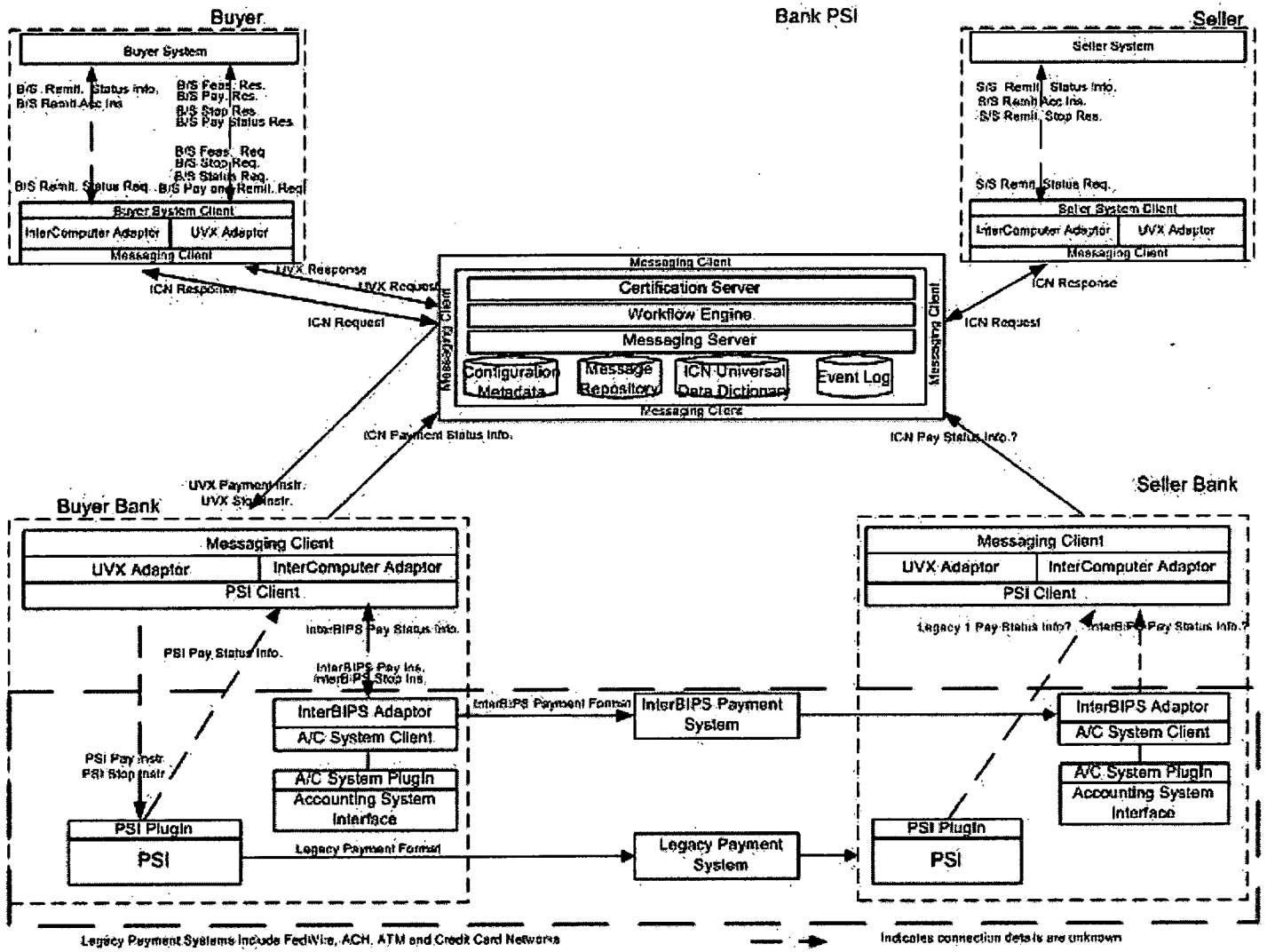
4.8.4 UVX Adaptor at Buyer Bank

4.8.5 InterComputer Adaptor at Buyer

4.8.6 InterComputer Adaptor at Seller

4.8.7 InterComputer Adaptor at the Buyer Bank

4.9 Bank PSI


Buyer
Buyer System
B/S Remit. Status Info.
B/S Remit Acc Ins
B/S Feas. Res.
B/S Pay. Res.
B/S Stop Res.
B/S Pay Status Res
B/S Feas. Req
B/S Stop Req.
B/S Status Req.
B/S Remit. Status Req.
B/S Pay and Remit. Req
Buyer System Client
InterComputer Adaptor
UVX Adaptor
Messaging Client
UVX Response
UVX Request
ICN Response
ICN Request
Bank PSI
Messaging Client
Certification Server
Workflow Engine
Messaging Server
Configuration Metadata
Message Repository
ICN Universal Data Dictionary
Event Log
Messaging Client
Messaging Client
ICN Payment Status Info.
ICN Pay Status Info.?
Seller
Seller System
S/S Remit. Status Info.
S/S Remit Acc Ins.
S/S Remit. Stop Res.
S/S Remit. Status Req.
Seller System Client
InterComputer Adaptor
UVX Adaptor
Messaging Client
ICN Response
ICN Request
UVX Payment Instr.
UVX Stop Instr.
Buyer Bank
Messaging Client
UVX Adaptor
InterComputer Adaptor
PSI Client
InterBIPS Pay Status Info.
PSI Pay Status Info.
InterBIPS Pay Ins.
InterBIPS Stop Ins.
InterBIPS Adaptor
A/C System Client
A/C System Plugin
Accounting System Interface
PSI Pay Instr.
PSI Stop Instr.
PSI Plugin
PSI
InterBIPS Payment Format
InterBIPS Payment System
Legacy Payment Format
Legacy Payment System
Seller Bank
Messaging Client
UVX Adaptor
InterComputer Adaptor
PSI Client
Legacy 1 Pay Status Info?
InterBIPS Pay Status Info.?
InterBIPS Adaptor
A/C System Client
A/C System Plugin
Accounting System Interface
PSI Plugin
PSI
Legacy Payment Systems include FedWire, ACH, ATM and Credit Card Networks
Indicates connection details are unknown

5 Business Use Cases

Business Use Cases have been developed for the following Systems

1. ICN Platform

5.1 ICN Platform

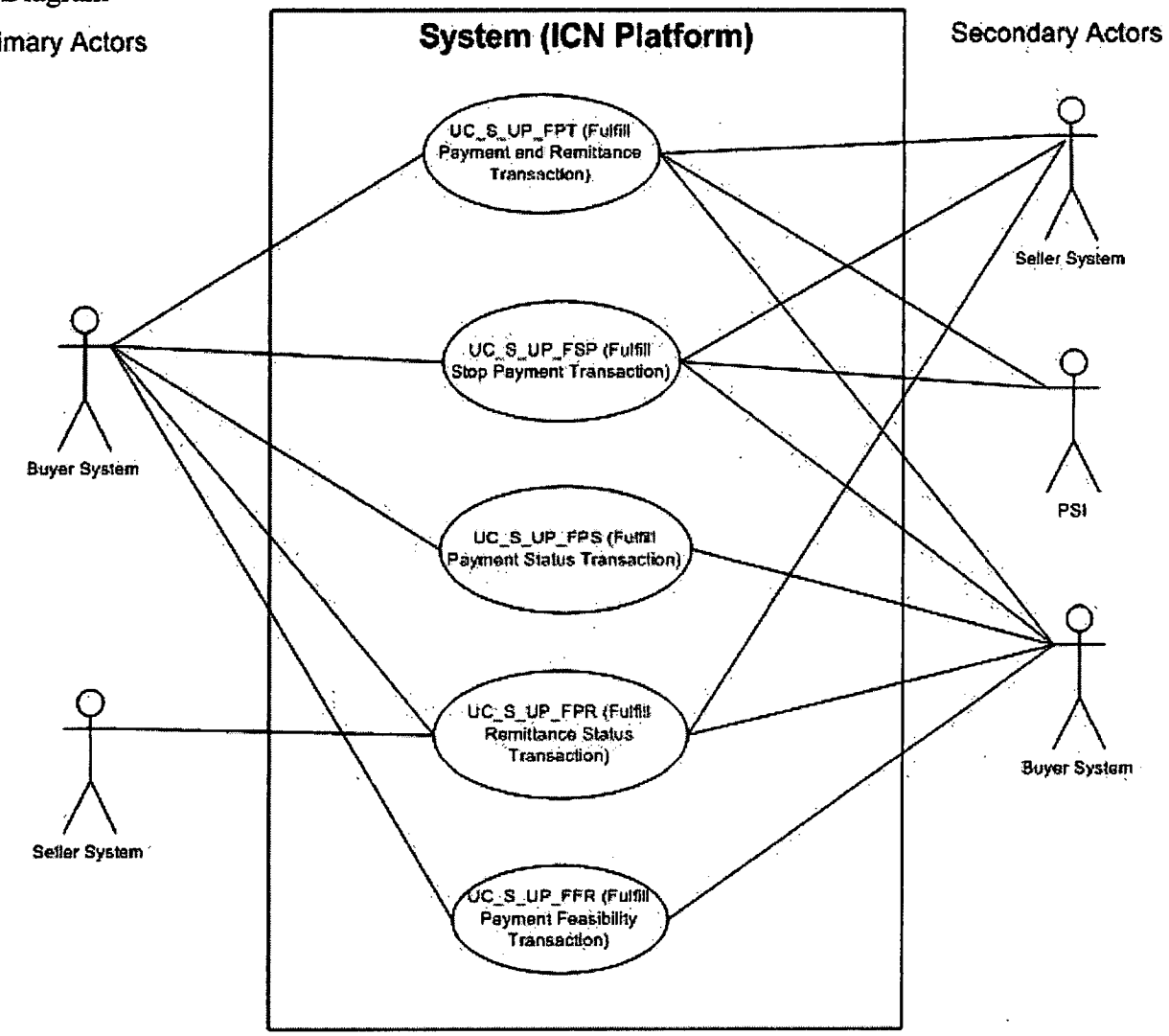
5.1.1 System

The system has been identified as the **ICN Platform**

5.1.2 Components

The components within the ICN Platform are indicated in ICN Platform

5.1.3 Use Case Diagram



5.1.4 Actors

The System interacts with the following Actors

5.1.5 Primary Actors

1. Buyer System (B/S)
2. Seller System (S/S)

5.1.6 Secondary Actors

1. Bank Payment System Interface (PSI)
2. Buyer System (B/S)
3. Seller System (S/S)

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5.1.7 Use Cases

Use Case ID	UC_S_UP_FPT	
Description	Fulfill Payment and Remittance Transaction	
Version	0.93	
Goal	Send *Payment and Remittance Request* to the System. Receive *Payment Response*. Receive *Remittance Status Information*. Receive *Remittance Accounting Instruction*.	
Scope	System	
Level	Summary	
Trigger	#	Trigger Action(s)
	1	Buyer System provides the Request (*B/S Payment and Remittance Request*) to the System
Pre-conditions	#	Pre-condition
	1	Buyer set up the *Payment and Remittance Request* with the Buyer System
Success Post-condition	#	Success Post-condition
	1	Buyer System receives *Remittance Accounting Instruction*
	2	Seller System receives *Remittance Accounting Instruction*
	3	Buyer System receives *Payment Response*
	4	Buyer System receives *Remittance Status Information*
	5	Seller System receives *Remittance Status Information*
Failure Post-condition	#	Failure Post-condition
	1	Buyer System does not receive *Remittance Accounting Instruction*
	2	Seller System does not receive *Remittance Accounting Instruction*
	3	Buyer System receives *Payment Transfer Response*
	4	Buyer System receives *Remittance Status Information*

	5	Seller System receives *Remittance Status Information*			
Main Success Scenario	*Step #*	*Use Case ID*	*Pre-Condition*	*System Responsibility*	*Secondary Actor Responsibility*
	1	UC_PT_WE_WPI UC_PT_WE_WRP UC_PT_WE_WRI	*B/S Payment and Remittance Request* received by System	Execute *Payment Instruction* Workflow Execute *Payment Response Workflow* Execute *Process Remittance Status Information Workflow*	
	2	UC_S_MS_SPI	Payment Instruction created	Send *Payment Instruction* to PSI	
	3	UC_S_MS_SRP	Payment Response created	Send *Payment Response* to Buyer System	
	4	UC_S_MS_SRI	Remittance Status Information created	Send *Remittance Status Information* to Buyer System and Seller System	

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	5	UC_PT_WE_WFI UC_PT_WE_WRI	*Payment Status Information* received from PSI	Execute *Process Remittance Accounting Instruction Workflow* Execute *Process Remittance Status Information Workflow*	
	6	UC_S_MS_SFI	*Remittance Accounting Instruction* created *Remittance Status Information* created	Send *Remittance Accounting Instruction* and *Remittance Status Information* to Buyer System Send *Remittance Accounting Instruction* and *Remittance Status Information* to Seller System	
Extensions	*Step #*	*Use Case ID*	*Condition*	*Branching Action Description*	
Sub-Variations	#	*Use Case ID*	*Variation*	*Description*	

	1	UC_S_UP_FPT_IR	*Payment and Remittance Request Invalid*	Invalid Request data from B/S
	2	UC_S_UP_FPT_IS	*Status Invalid*	Invalid *Payment Status Information* from PSI
	3	UC_S_UP_FPT_WI	*Process Instruction Workflow failed*	Failed to execute *Payment Instruction* Workflow
	4	UC_S_UP_FPT_WR	*Process Response Workflow failed*	Failed to execute *Payment Response Workflow*
	5	UC_S_UP_FPT_WS	*Process Remittance Status Information failed*	Failed to execute *Process Remittance Status Information* Workflow
	6	UC_S_UP_FPT_WF	*Process Remittance Accounting Instruction* workflow failed	Failed to execute *Process Remittance Accounting Instruction* Workflow
Priority	High			
Primary Actor	Buyer System			
Secondary Actor	Buyer System Payment System Interface			

	Seller System	
Performance Target	All messages should have guaranteed delivery	
Frequency	As and when triggered by the Buyer System	
Super-ordinate Use Case(s)	None	
Sub-ordinate Use Cases (s)		
Channel(s) to Primary Actor	Primary Actor	Channel
	Buyer System	Not yet determined.
Channel(s) to Secondary Actor(s)	Secondary Actor	Channel
	Buyer System	Not yet determined.
	Payment System Interface	Not yet determined.
	Seller System	Not yet determined.
Open Issues		
Schedule	Scheduled for DEMO	

Assumptions	#	Assumption
	1	Payment Status Information is sent from PSI
	2	The ICN Transactions can be matched with the Payment System Transactions
	3	The ICN Transactions can be matched with the Buyer System and the Seller System Transactions
	4	Payment Status Information will indicate success or failure of a Payment System Transaction

More information		

Use Case ID	UC_S_UP_FSP				
Description	Fulfill Stop Payment Transaction				
Version	0.93				
Goal	Send *Payment Stop Request* to the System to stop payment transaction. Receive *Payment Stop Response*. Receive *Remittance Stop Response*.				
Scope	System				
Level	Summary				
Trigger	#	Trigger Action(s)			
	1	Buyer System provides the *Payment Stop Request* (*B/S Payment Stop Request*) to the System			
Pre-conditions	#	Pre-condition			
	1	Buyer set up the *Payment Stop Request* with the Buyer System			
Success Post-condition	#	Success Post-condition			
	1	Payment Transaction rolled back			
	2	Buyer System received *Payment Stop Response*			
	3	Seller System received *Remittance Stop Response*			
Failure Post-condition	#	Failure Post-condition			
	1	Payment Transaction not rolled back			
	2	Buyer System received *Payment Stop Response*			
	3	Seller System received *Remittance Stop Response*			
Main Success Scenario	*Step #*	*Use Case ID*	*Pre-Condition*	*System Responsibility*	*Secondary Actor Responsibility*

	1	UC_PT_WE_WSP	*Payment Stop Request* received from the Buyer System	Execute *Stop Payment* Workflow	
	2	UC_S_MS_SSP	*Payment Stop Instruction* created	Send *Payment Stop Instruction* to PSI	
	3	UC_PT_WE_WSR	*Payment Stop Instruction* sent to PSI	Execute *Payment Stop Response* workflow Execute *Remittance Stop Response* workflow	
	4	UC_S_MS_SSR	*Payment Stop Response* created *Remittance Stop Response* created	Send *Payment Stop Response* to the Buyer System Send *Remittance Stop Response* to the Seller System	
Extensions	*Step #*	*Use Case ID*	*Condition*	*Branching Action Description*	
Sub-Variations	#	*Use Case ID*	*Variation*	*Description*	
	1	UC_S_UP_FSP_IR	*B/S Payment Stop Request*	Invalid Request data from B/S	

	2	UC_S_UP_FSP_WS	*Stop Payment* Workflow	Failed to execute *Stop Payment* Workflow
	3	UC_S_UP_FSP_WR	*Payment Stop Response* workflow	Failed to execute *Payment Stop Response* workflow
	4	UC_S_UP_FSP_WE	*Remittance Stop Response* workflow	Failed to execute *Remittance Stop Response* workflow
Priority	High			
Primary Actor	Buyer System			
Secondary Actor	Buyer System Seller System Payment System Interface			
Performance Target	All messages should have guaranteed delivery			
Frequency	As and when triggered by the Buyer System			
Super-ordinate Use Case(s)	None			
Sub-ordinate Use Cases (s)				
Channel(s) to Primary Actor	Primary Actor	Channel		
	Buyer System	Not yet determined.		
Channel(s) to Secondary Actor(s)	Secondary Actor	Channel		
	Buyer System	Not yet determined.		
	Seller System	Not yet determined		

	Payment System Interface	Not yet determined
Open Issues	The Payment System Interface needs to receive the payment transaction identifier for the payment that has to be stopped. How will that be achieved?	
Schedule	Scheduled for DEMO	
Assumptions	#	Assumption
	1	*Payment Stop Request* will be defined in UVX
	2	*Payment Stop Response* will be defined in UVX
	3	*Payment Stop Instruction* will be defined in UVX
	4	*Remittance Stop Response* will be defined by Intercomputer
	5	The PSI accepts *Payment Stop Instructions*
More information		

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Use Case ID	UC_S_UP_FPS				
Description	Fulfill Payment Status Transaction				
Version	0.92				
Goal	Send *Payment Status Request* to the System. Receive *Response* to *Payment Status Request.*				
Scope	System				
Level	Summary				
Trigger	#	Trigger Action(s)			
	1	Buyer System provides the *Payment Status Request* (*B/S Payment Status Request*) to the System.			
Pre-conditions	#	Pre-condition			
	1	Buyer set up *Payment Status Request* (*B/S Payment Status Request*) to the Buyer System			
Success Post-condition	#	Success Post-condition			
	1	Buyer System received *Response* to *Payment Status Request*			
Failure Post-condition	#	Failure Post-condition			
	1	Buyer System received *Response* to *Payment Status Request*			
Main Success Scenario	*Step #*	*Use Case ID*	*Pre-Condition*	*System Responsibility*	*Secondary Actor Responsibility*
	1	UC_PT_WE_WST	*B/S Payment Status Request* received from the System	Execute *Payment Status* Workflow	
	2	UC_PT_WE_WTR	*Payment Status* workflow executed	Execute *Process Response to Payment Status Request* workflow	

	3	UC_S_MS_STR	Response to Status Request created	Send *Response to Payment Status Request* to B/S	
Extensions	*Step #*	*Use Case ID*	*Condition*	*Branching Action Description*	
Sub-Variations	#	*Use Case ID*	*Variation*	*Description*	
	1	UC_S_UP_FPS_IR	*Status Request Invalid*	Invalid Request data from B/S	
	2	UC_S_UP_FPS_WT	*Payment Status Workflow* failed	Failed to execute *Payment Status* Workflow	
	3	UC_S_UP_FPS_WR	*Response to Payment Status Request* workflow	Failed to execute *Response to Payment Status Request* workflow	
Priority	High				
Primary Actor	Buyer System				
Secondary Actor	Buyer System				
Performance Target	All messages should have guaranteed delivery				
Frequency	As and when triggered by the Buyer System				
Super-ordinate Use Case(s)	None				
Sub-ordinate Use Cases (s)					

Channel(s) to Primary Actor	Primary Actor	Channel
	Buyer System	Not yet determined.
Channel(s) to Secondary Actor(s)	Secondary Actor	Channel
	Buyer System	Not yet determined.
Open Issues		
Schedule	Scheduled for DEMO	
Assumptions	#	Assumption
	1	The System receives the payment status information from the PSI asynchronously
	2	The System does not access the PSI directly in executing this transaction
More information		

Use Case ID	UC_S_UP_FPR				
Description	Fulfill Remittance Status Transaction				
Version	0.92				
Goal	Send *Remittance Status Request* to the System. Receive *Remittance Status Information.*				
Scope	System				
Level	Summary				
Trigger	#	Trigger Action(s)			
	1	Initiator System (Buyer or Seller System) provides the *Remittance Status Request* to the System.			
Pre-conditions	#	Pre-condition			
	1	Initiator (Buyer or Seller) set up *Remittance Status Request* to the Initiator System			
Success Post-condition	#	Success Post-condition			
	1	Initiator receives *Remittance Status Information*			
Failure Post-condition	#	Failure Post-condition			
	1	Initiator receives *Remittance Status Information*			
Main Success Scenario	*Step #*	*Use Case ID*	*Pre-Condition*	*System Responsibility*	*Secondary Actor Responsibility*
	1	UC_PT_WE_WER	*Remittance Status Request* received from the Initiator System	Execute *Remittance Status* Workflow	
	2	UC_PT_WE_WES	*Remittance Status* workflow executed	Execute *Process Remittance Status Information* workflow	

	3	UC_S_MS_SES	*Remittance Status Information* created	Send *Remittance Status Information* to Initiator System	
Extensions	*Step #*	*Use Case ID*	*Condition*	*Branching Action Description*	
Sub-Variations	#	*Use Case ID*	*Variation*	*Description*	
	1	UC_S_UP_FPR_IR	*Status Request Invalid*	Invalid Request data from Initiator	
	2	UC_S_UP_FPR_WT	*Remittance Status Workflow* failed	Failed to execute *Remittance Status* Workflow	
	3	UC_S_UP_FPR_WR	*Remittance Status Information* workflow	Failed to execute *Remittance Status Information* workflow	
Priority	High				
Primary Actor	Buyer System or Seller System				
Secondary Actor	Buyer System or Seller System				
Performance Target	All messages should have guaranteed delivery				
Frequency	As and when triggered by the Buyer System or Seller System				
Super-ordinate Use Case(s)	None				

Sub-ordinate Use Cases (s)		
Channel(s) to Primary Actor	Primary Actor	Channel
	Initiator System	Not yet determined.
Channel(s) to Secondary Actor(s)	Secondary Actor	Channel
	Initiator System	Not yet determined.
Open Issues		
Schedule	Scheduled for DEMO	
Assumptions	#	Assumption
More information		

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Use Case ID	UC_S_UP_FFR				
Description	Fulfill Payment Feasibility Transaction				
Status	VALID				
Goal	Send *Feasibility Request* to the System. Receive *Feasibility Response*.				
Scope	System				
Level	Primary Task				
Trigger	#	Trigger Action(s)			
	1	Buyer System provides the *Feasibility Request* to the System			
Pre-conditions	#	Pre-condition			
	1	Buyer sets up *Feasibility Request* with the Buyer System			
Success Post-condition	#	Success Post-condition			
	1	Buyer receives *Feasibility Response*			
Failure Post-condition	#	Failure Post-condition			
	1	Buyer receives *Feasibility Response*			
Main Success Scenario	*Step #*	*Use Case ID*	*Pre-Condition*	*System Responsibility*	*Secondary Actor Responsibility*
	1	UC_PT_WE_WFE	*B/S Feasibility Request* received from the System	Execute *Feasibility* workflow	
	2	UC_PT_WE_WFR	*Feasibility* workflow executed	Execute *Process Response to Feasibility Request* workflow	

	3	UC_S_MS_SFR	*Response to Feasibility Request* created	Send *Response to Feasibility Request* to B/S	
Extensions	*Step #*	*Use Case ID*	*Condition*	*Branching Action Description*	
Sub-Variations	#	*Use Case ID*	*Variation*	*Description*	
	1	UC_S_UP_FFR_IR	Feasibility Request	Invalid Request data from B/S	
	2	UC_S_UP_FFR_WF	*Payment Feasibility* Workflow	Failed to execute *Payment Feasibility* workflow	
	3	UC_S_UP_FFR_WR	*Response to Feasibility Request* workflow	Failed to execute *Response to Feasibility Request* workflow	
Priority	High				
Primary Actor	Buyer System				
Secondary Actor	Buyer System				
Performance Target	All messages should have guaranteed delivery				
Frequency	As and when triggered by the Buyer System				
Super-ordinate Use Case(s)	None				
Sub-ordinate					

Use Cases (s)		
Channel(s) to Primary Actor	Primary Actor	Channel
	Buyer System	Not yet determined.
Channel(s) to Secondary Actor(s)	Secondary Actor	Channel
	Buyer System	Not yet determined.
Open Issues		
Schedule	Scheduled for DEMO	
Assumptions	#	Assumption
More information		

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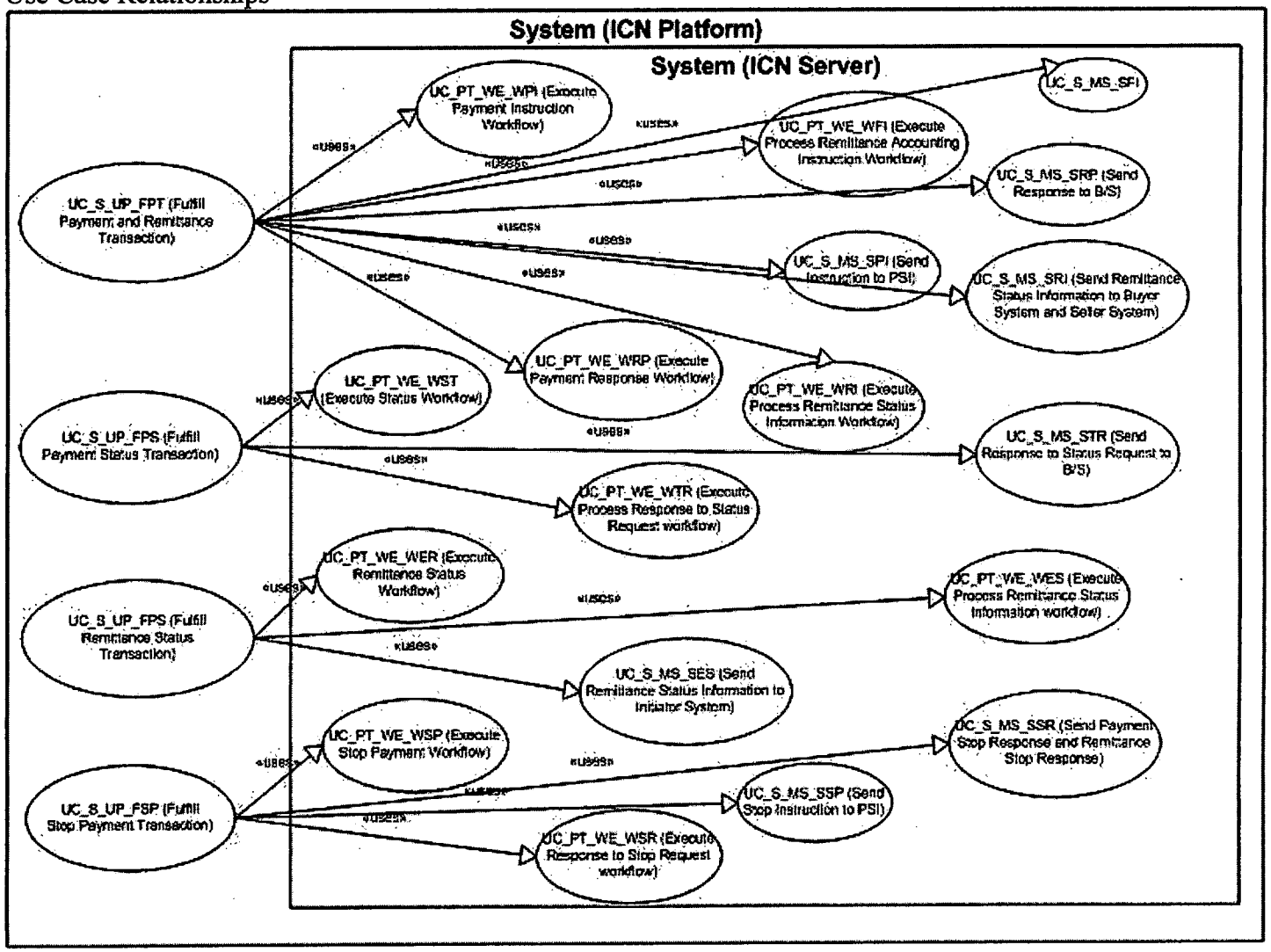
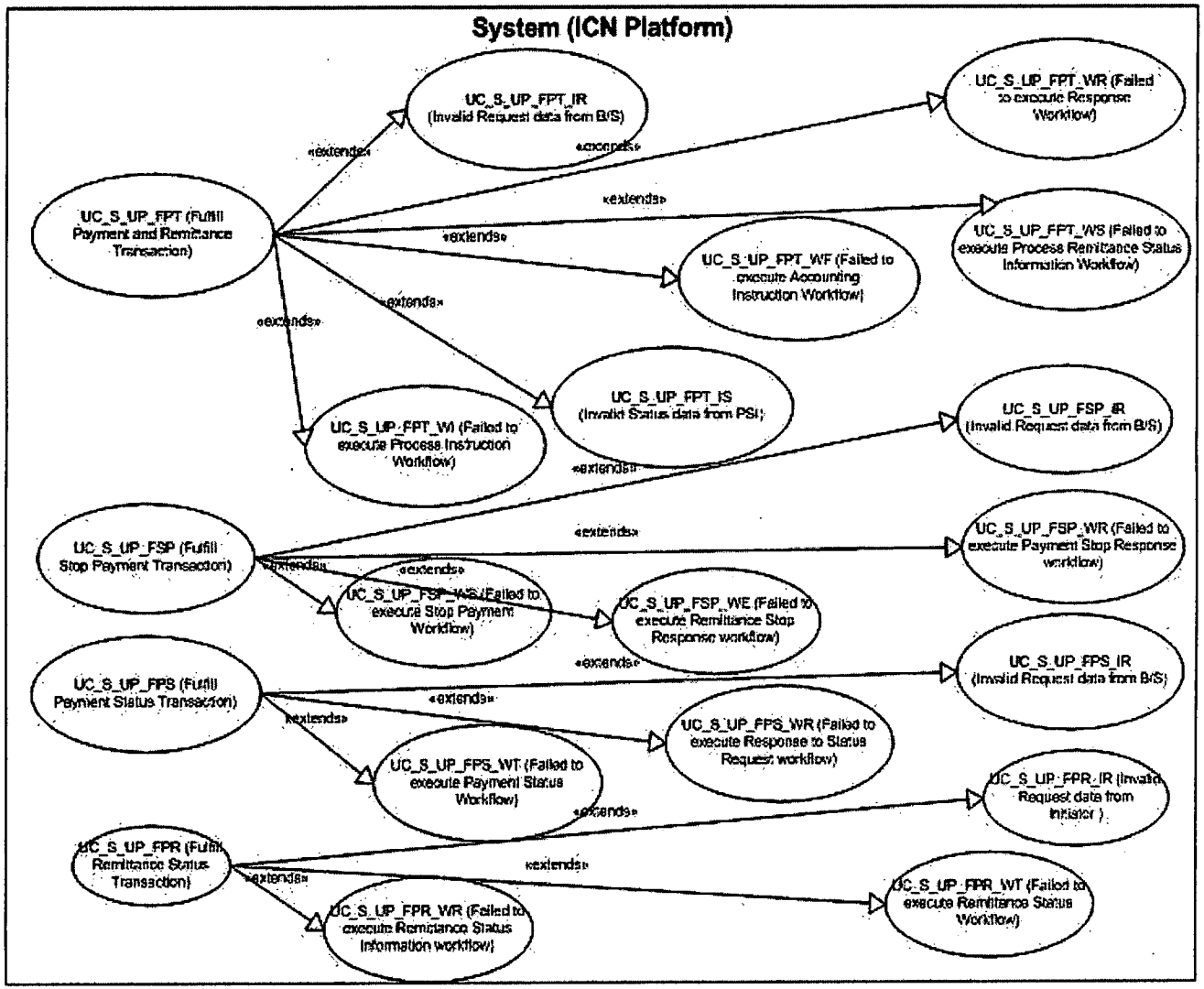
5.1.8 Use Case Relationships




System (ICN Platform)
UC_S_UP_FPT_IR (Invalid Request data from B/S)
UC_S_UP_FPT_WR (Failed to execute Response Workflow)
UC_S_UP_FPT (Fulfill Payment and Remittance Transaction)
UC_S_UP_FPT_WF (Failed to execute Accounting Instruction Workflow)
UC_S_UP_FPT_WS (Failed to execute Process Remittance Status Information Workflow)
UC_S_UP_FPT_WI (Failed to execute Process Instruction Workflow)
UC_S_UP_FPT_IS (Invalid Status data from PSI)
UC_S_UP_FSP_IR (Invalid Request data from B/S)
UC_S_UP_FSP (Fulfill Stop Payment Transaction)
UC_S_UP_FSP_WR (Failed to execute Payment Stop Response workflow)
UC_S_UP_FSP_WS (Failed to execute Stop Payment Workflow)
UC_S_UP_FSP_WE (Failed to execute Remittance Stop Response workflow)
UC_S_UP_FPS_IR (Invalid Request data from B/S)
UC_S_UP_FPS (Fulfill Payment Status Transaction)
UC_S_UP_FPS_WR (Failed to execute Response to Status Request workflow)
UC_S_UP_FPS_WT (Failed to execute Payment Status Workflow)
UC_S_UP_FPR_IR (Invalid Request data from Initiator)
UC_S_UP_FPR (Fulfill Remittance Status Transaction)
UC_S_UP_FPR_WT (Failed to execute Remittance Status Workflow)
UC_S_UP_FPR_WR (Failed to execute Remittance Status Information workflow)
«extends»

6 Business Data Objects

The following business data objects have been identified through the use-cases

6.1 Payment Transfer Process

6.1.1 B/S Payment and Remittance Request

6.1.2 UVX Payment and Remittance Request

6.1.3 UVX Payment Response

6.1.4 B/S Payment Response

6.1.5 UVX Payment Instruction

6.1.6 PSI Payment Instruction

6.1.7 PSI Payment Status Information

6.1.8 ICN Payment Status Information

6.1.9 ICN Remittance Accounting Instruction

6.1.10 S/S Remittance Accounting Instruction

6.1.11 B/S Remittance Accounting Instruction

6.1.12 ICN Remittance Status Information

6.1.13 S/S Remittance Status Information

6.1.14 B/S Remittance Status Information

6.2 Payment Feasibility Process

6.2.1 B/S Payment Feasibility Request

6.2.2 UVX Payment Feasibility Request

6.2.3 UVX Payment Feasibility Response

6.2.4 B/S Payment Feasibility Response

6.3 Payment Status Process

6.3.1 B/S Payment Status Request

6.3.2 UVX Payment Status Request

6.3.3 UVX Payment Status Response

6.3.4 B/S Payment Status Response

6.4 Payment Stop Process

6.4.1 B/S Payment Stop Request

6.4.2 UVX Payment Stop Request

6.4.3 UVX Payment Stop Instruction

6.4.4 PSI Payment Stop Instruction

6.4.5 UVX Payment Stop Response

6.4.6 B/S Payment Stop Response

6.4.7 ICN Remittance Stop Response

6.4.8 S/S Remittance Stop Response

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6.5 Remittance Status Process

6.5.1 B/S Remittance Status Request

6.5.2 S/S Remittance Status Request

6.5.3 ICN Remittance Status Request

6.5.4 ICN Remittance Status Information

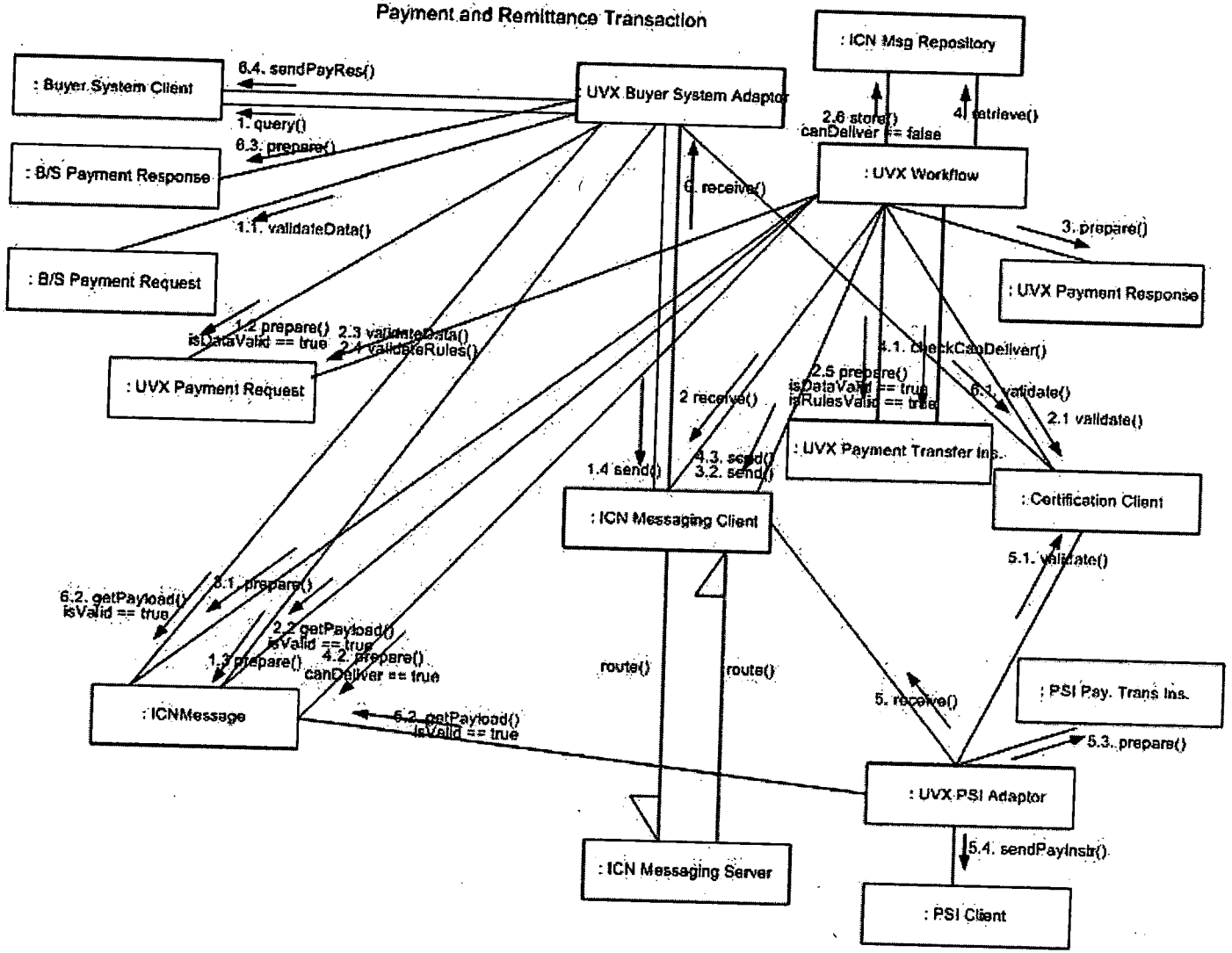
6.5.5 B/S Remittance Status Information

6.5.6 S/S Remittance Status Information

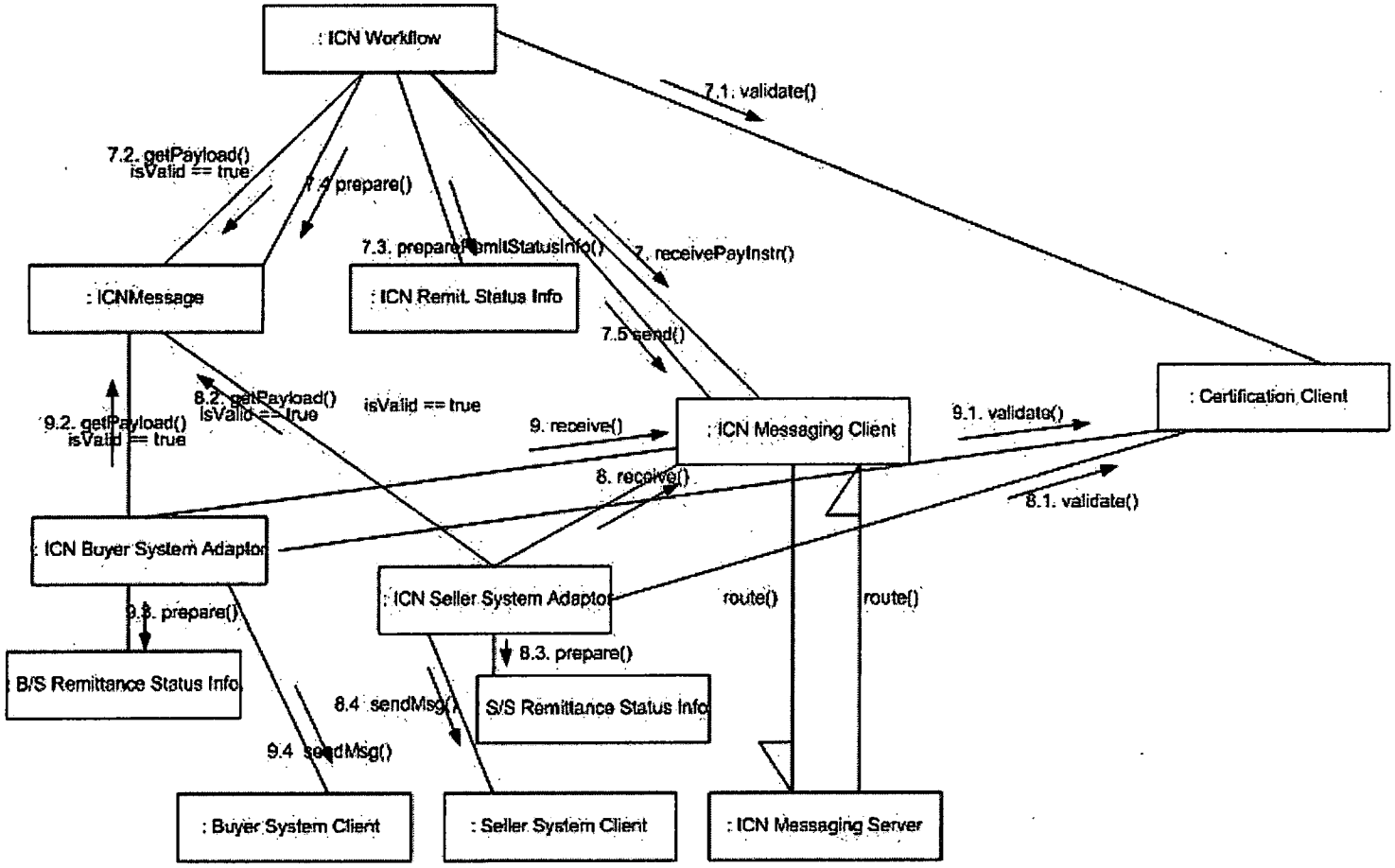
7 Interaction Diagrams

Interaction diagrams consist of Collaboration Diagrams and Sequence Diagrams.

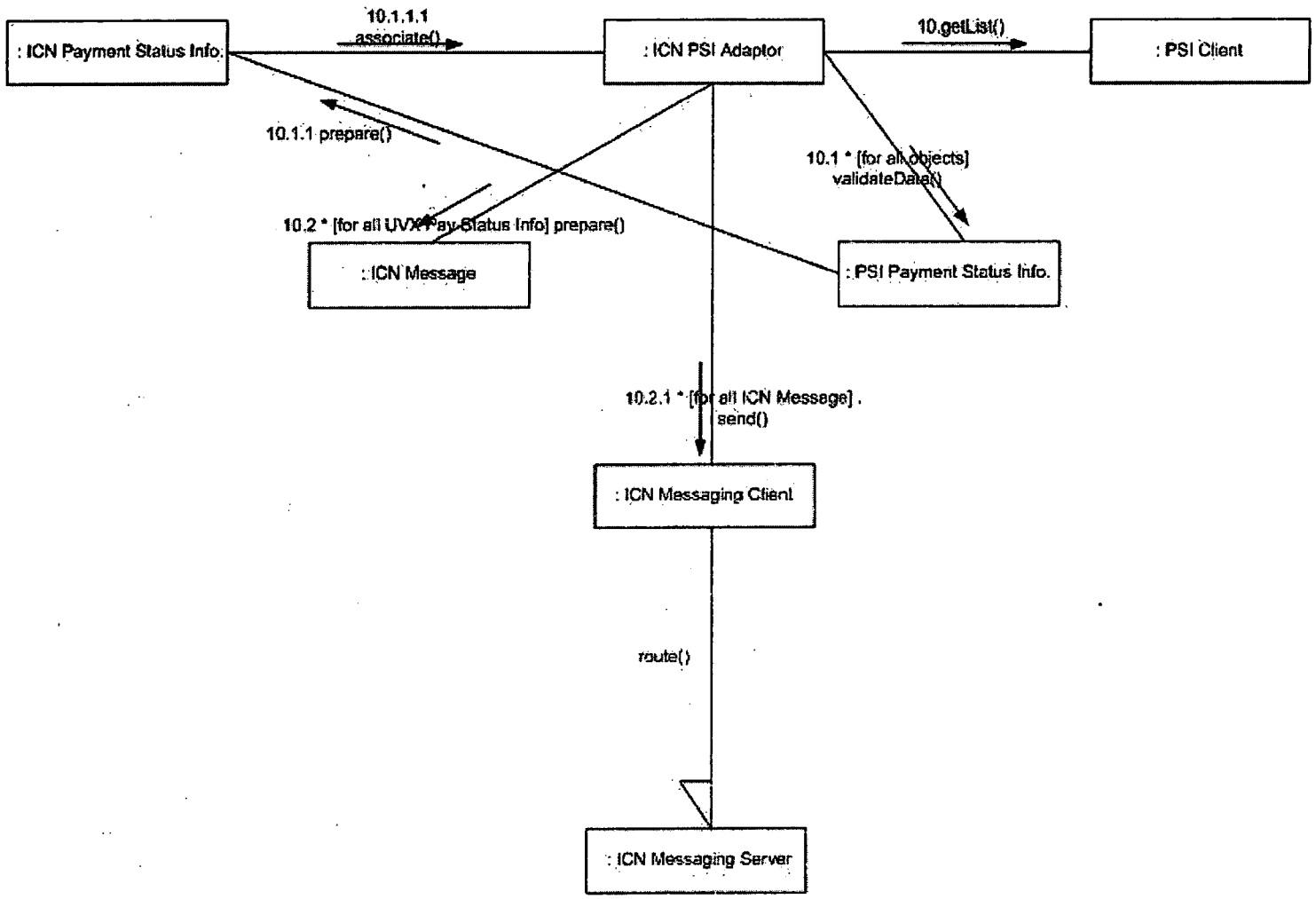
7.1 Collaboration Diagrams



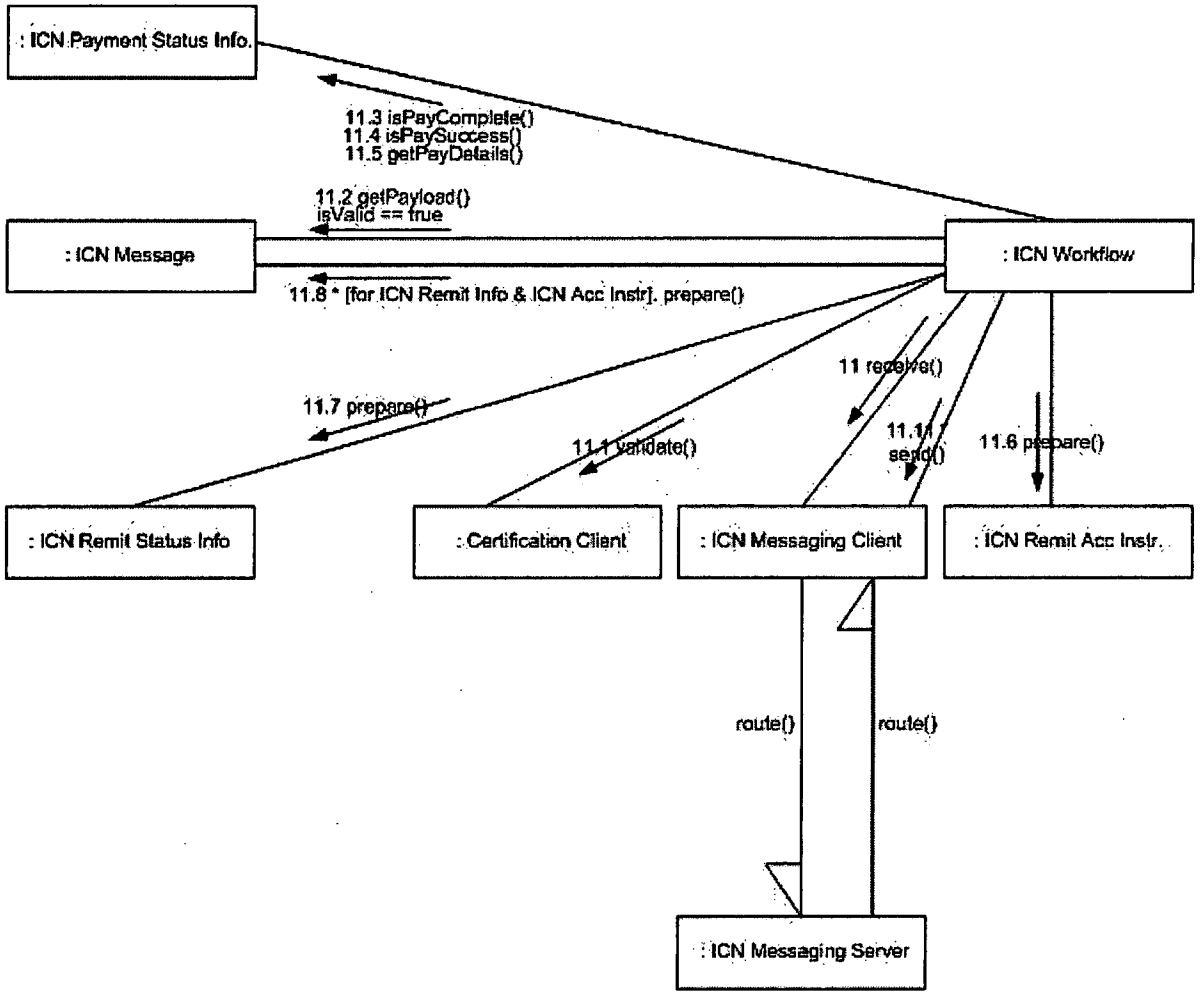
Payment and Remittance Transaction



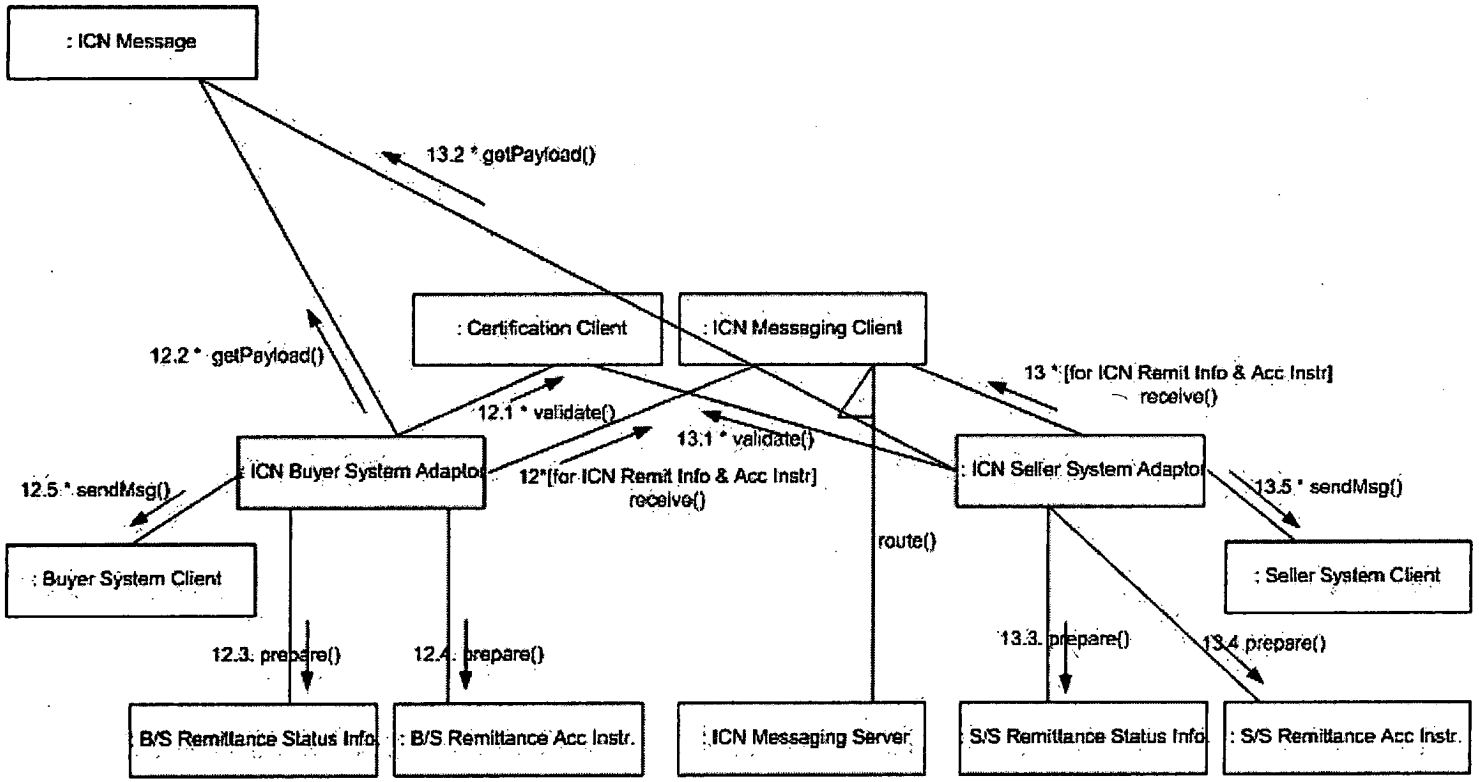
Payment and Remittance Transaction



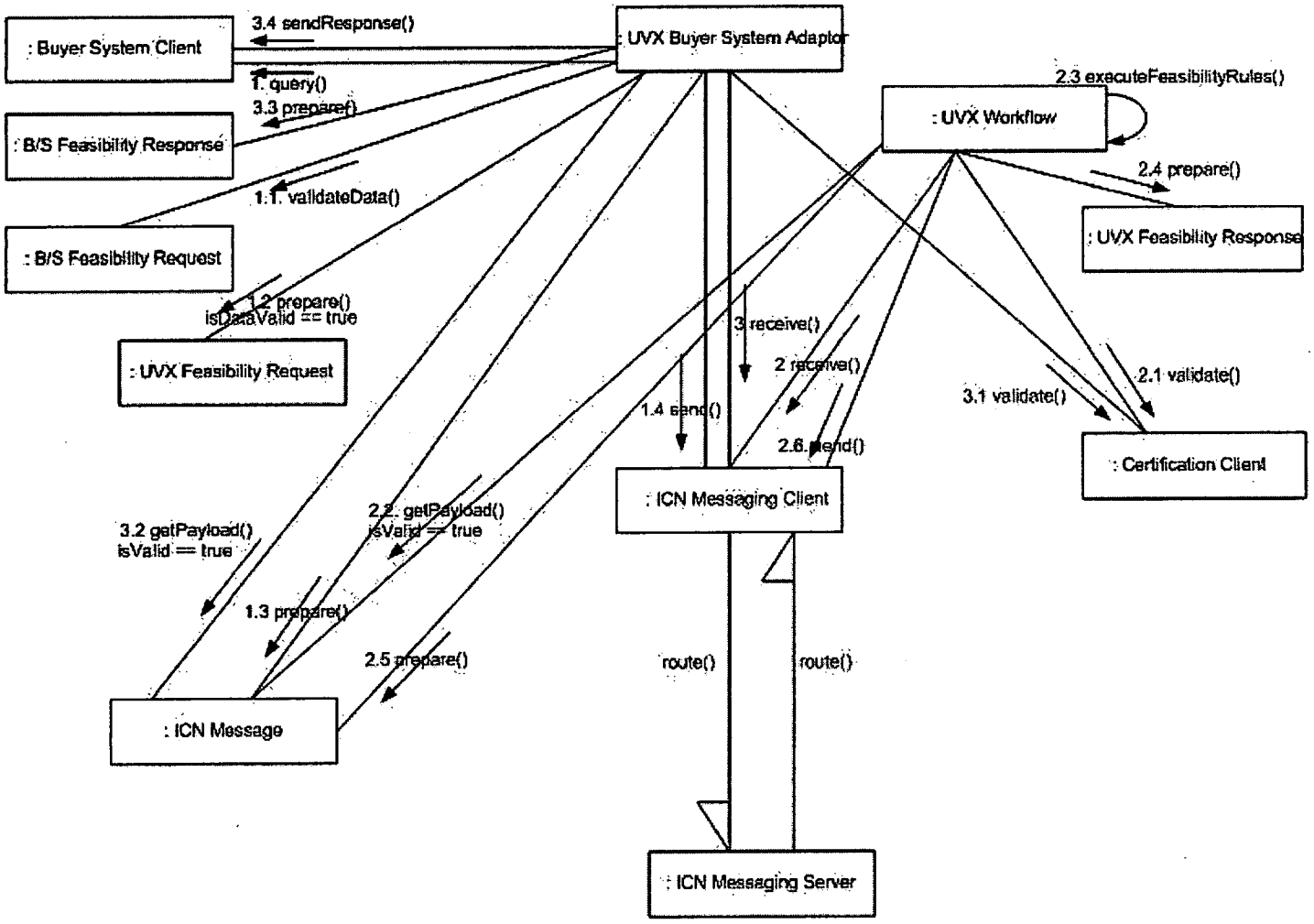
Payment and Remittance Transaction



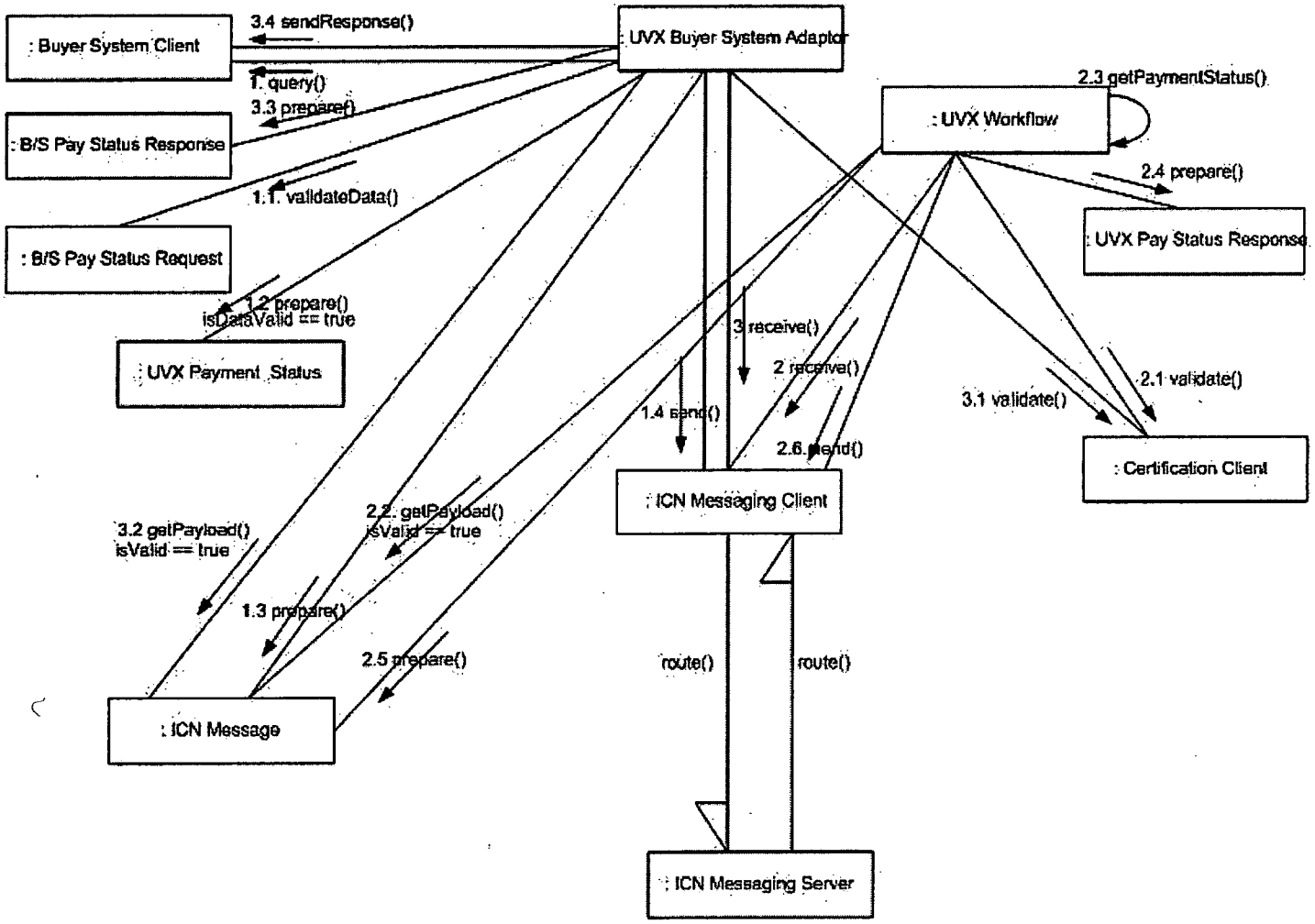
Payment and Remittance Transaction



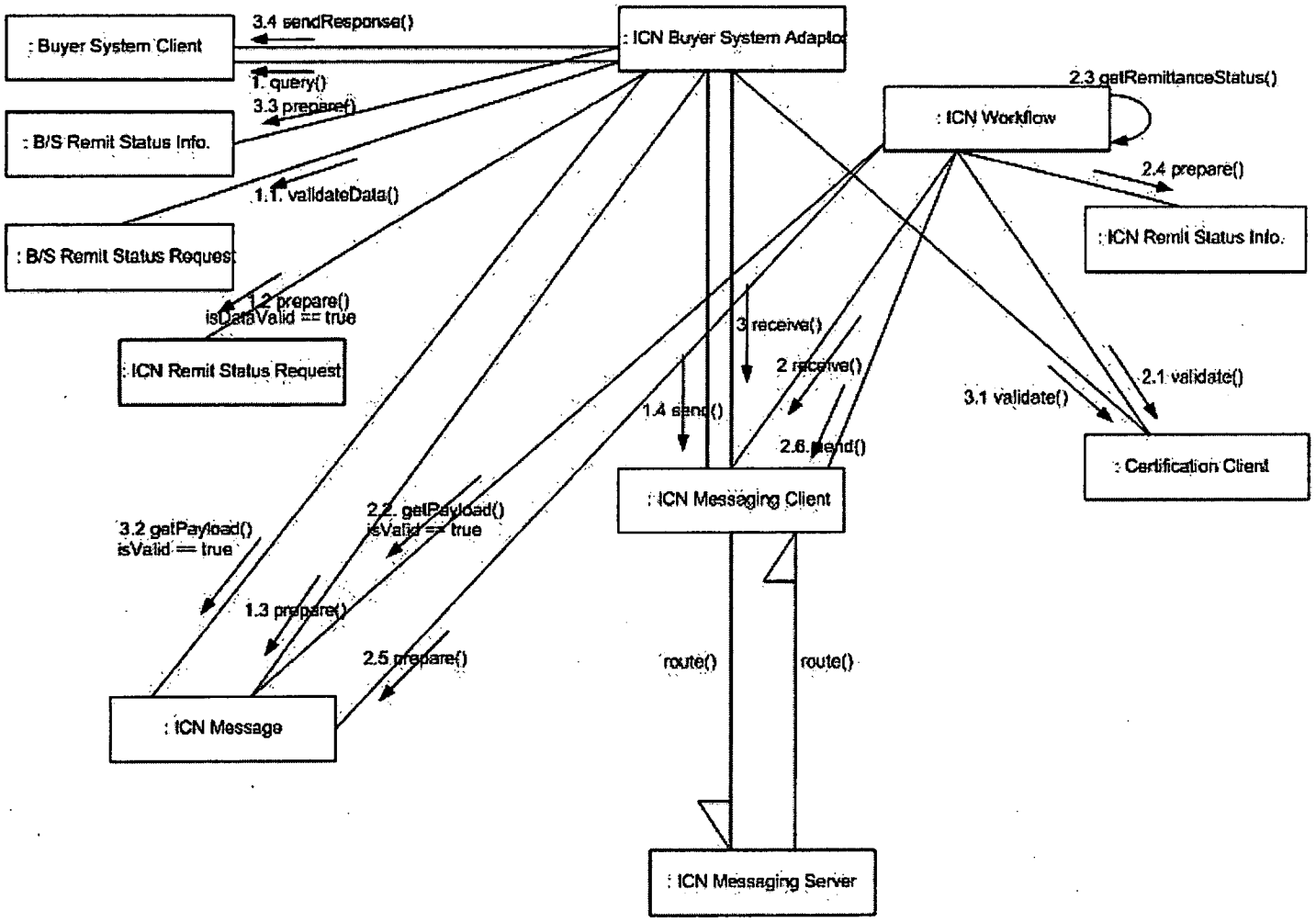
Payment Feasibility Transaction



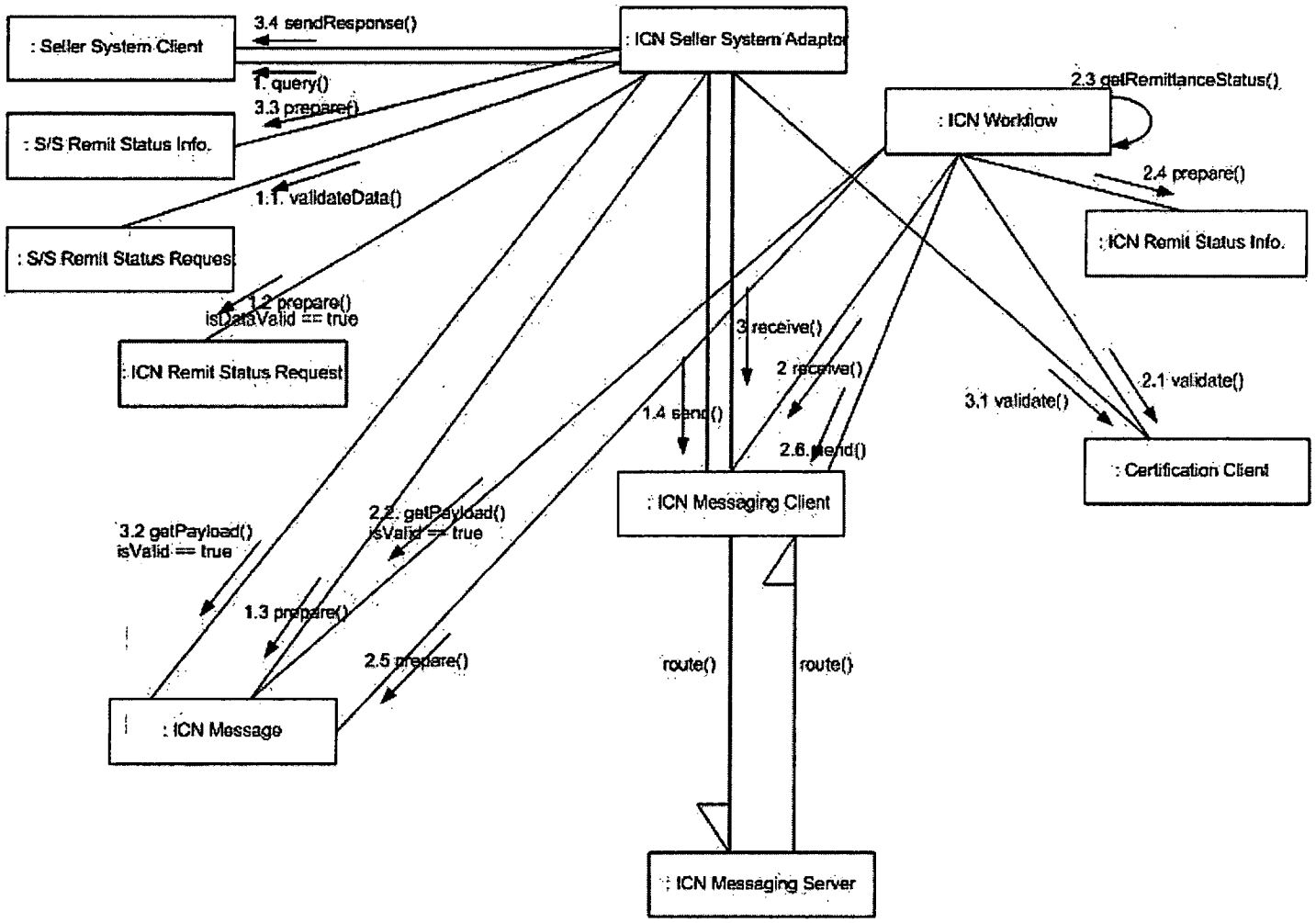
Payment Status Transaction



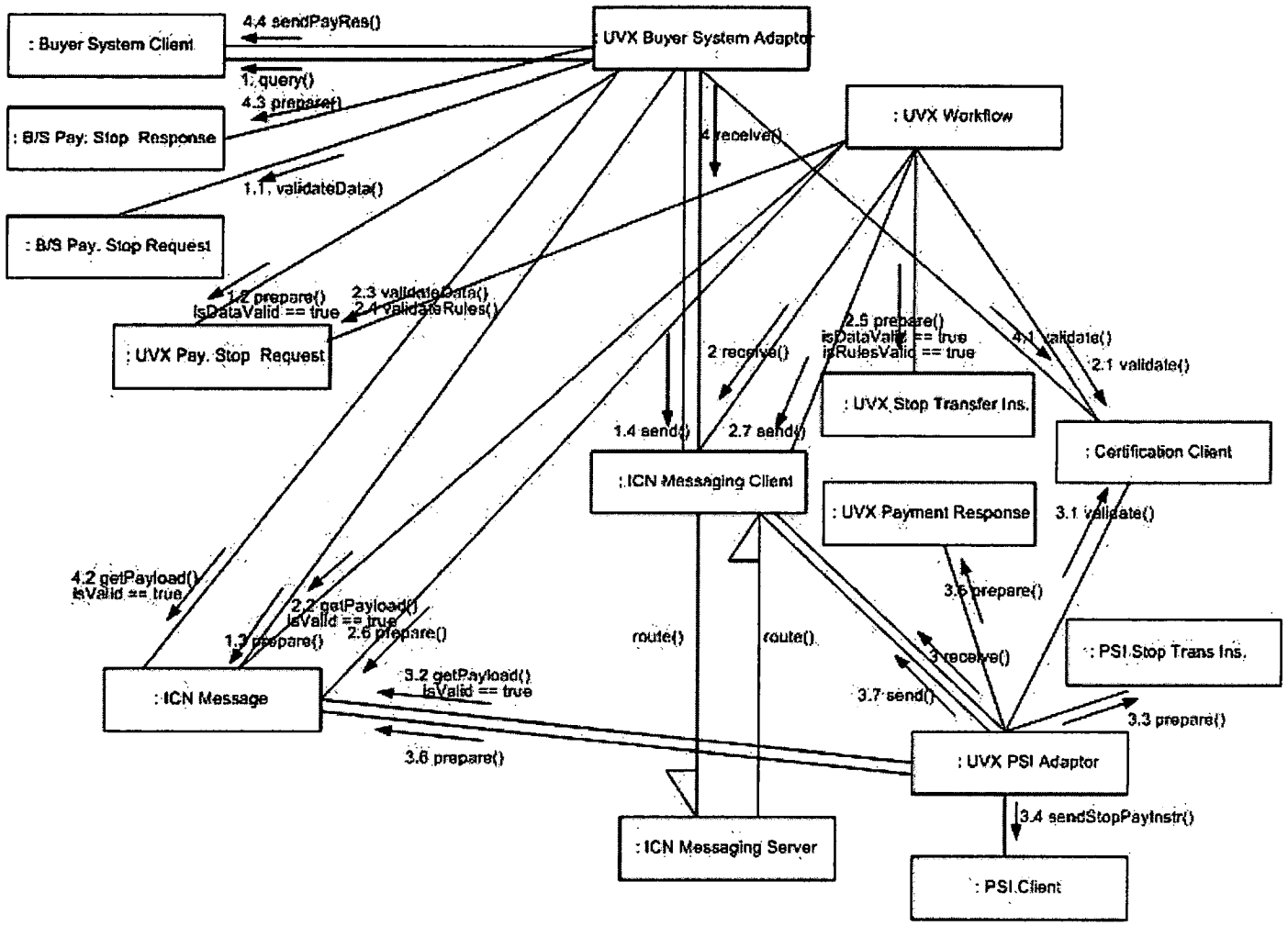
Remittance Status Transaction



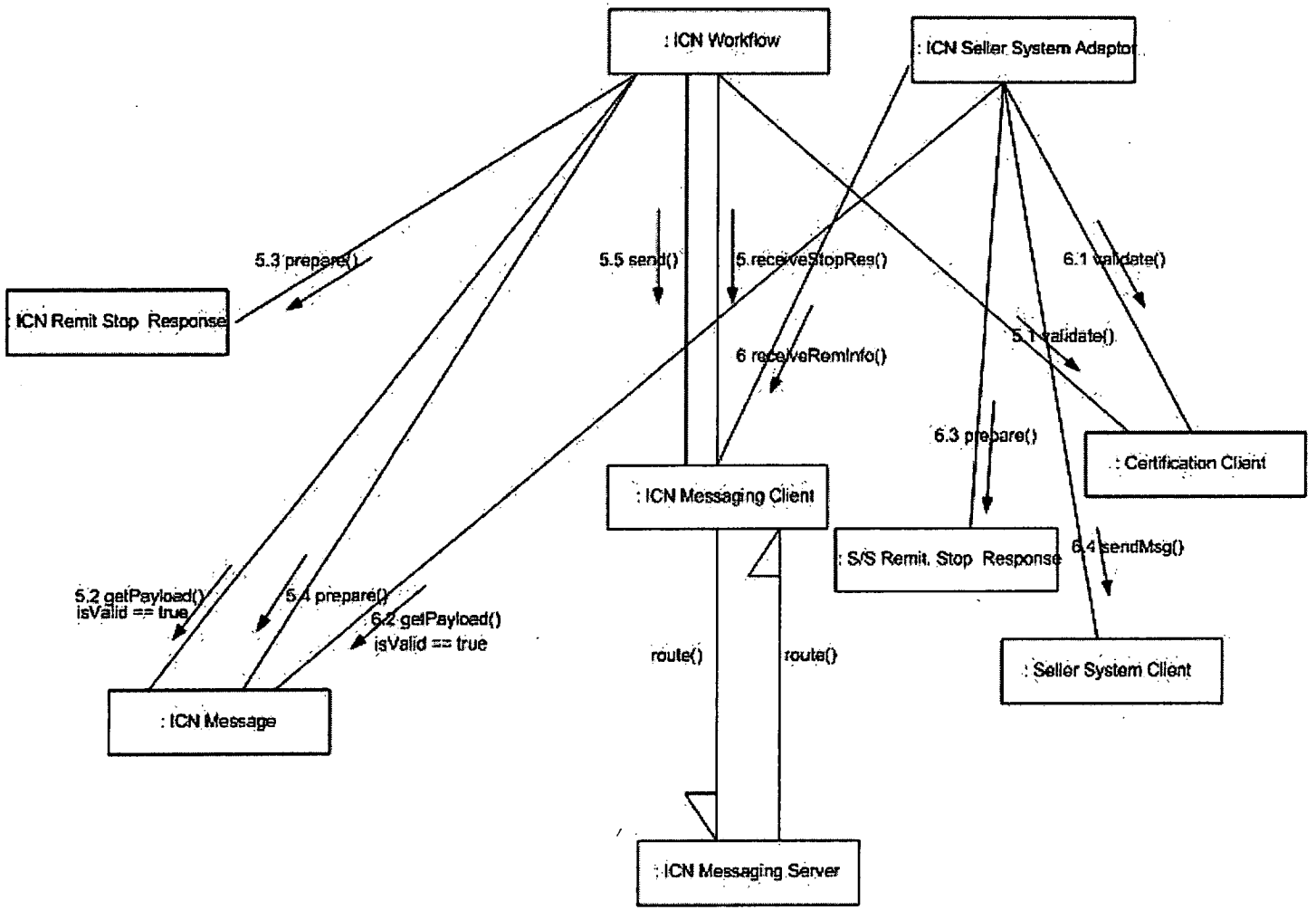
Remittance Status Transaction



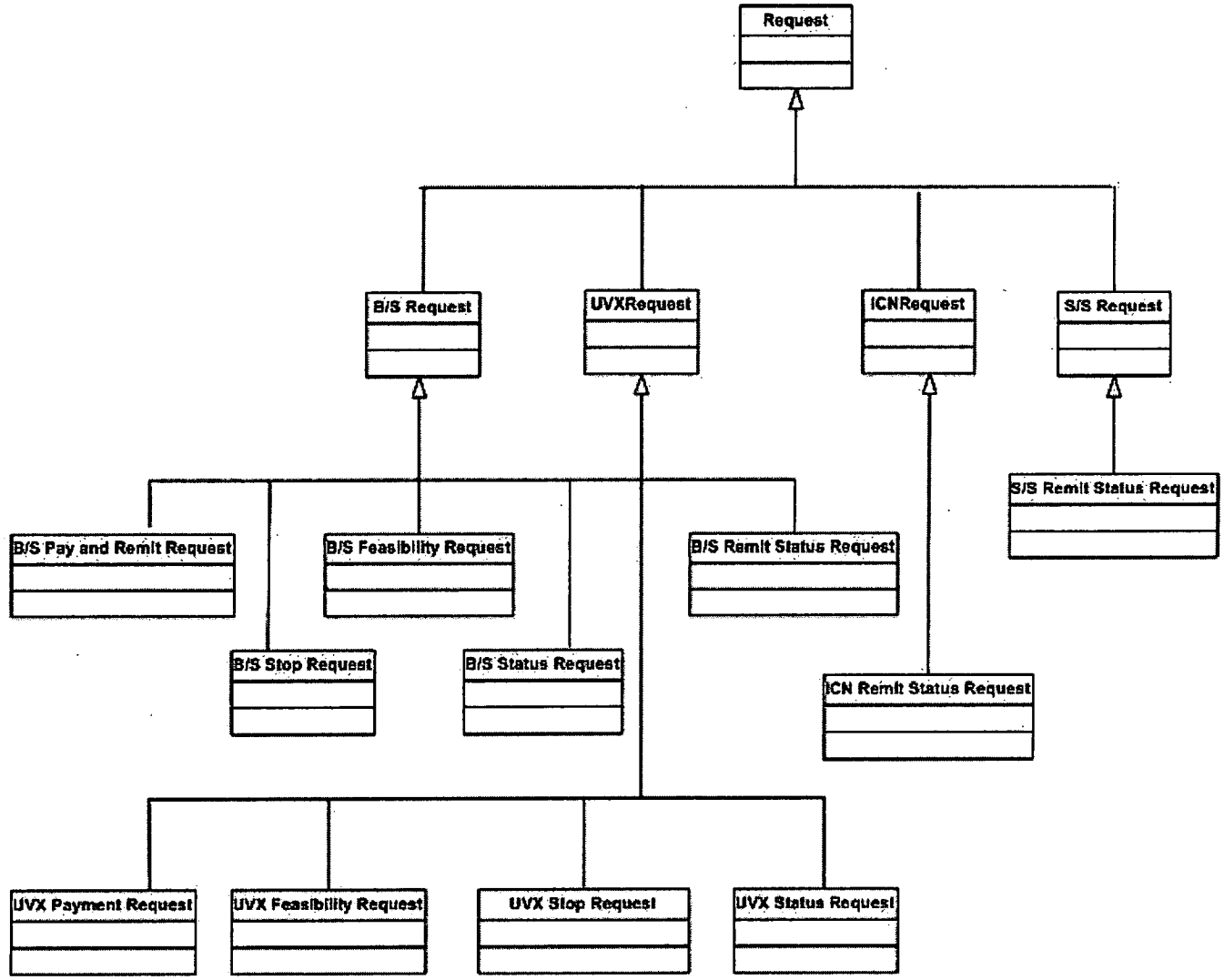
Payment Stop Transaction

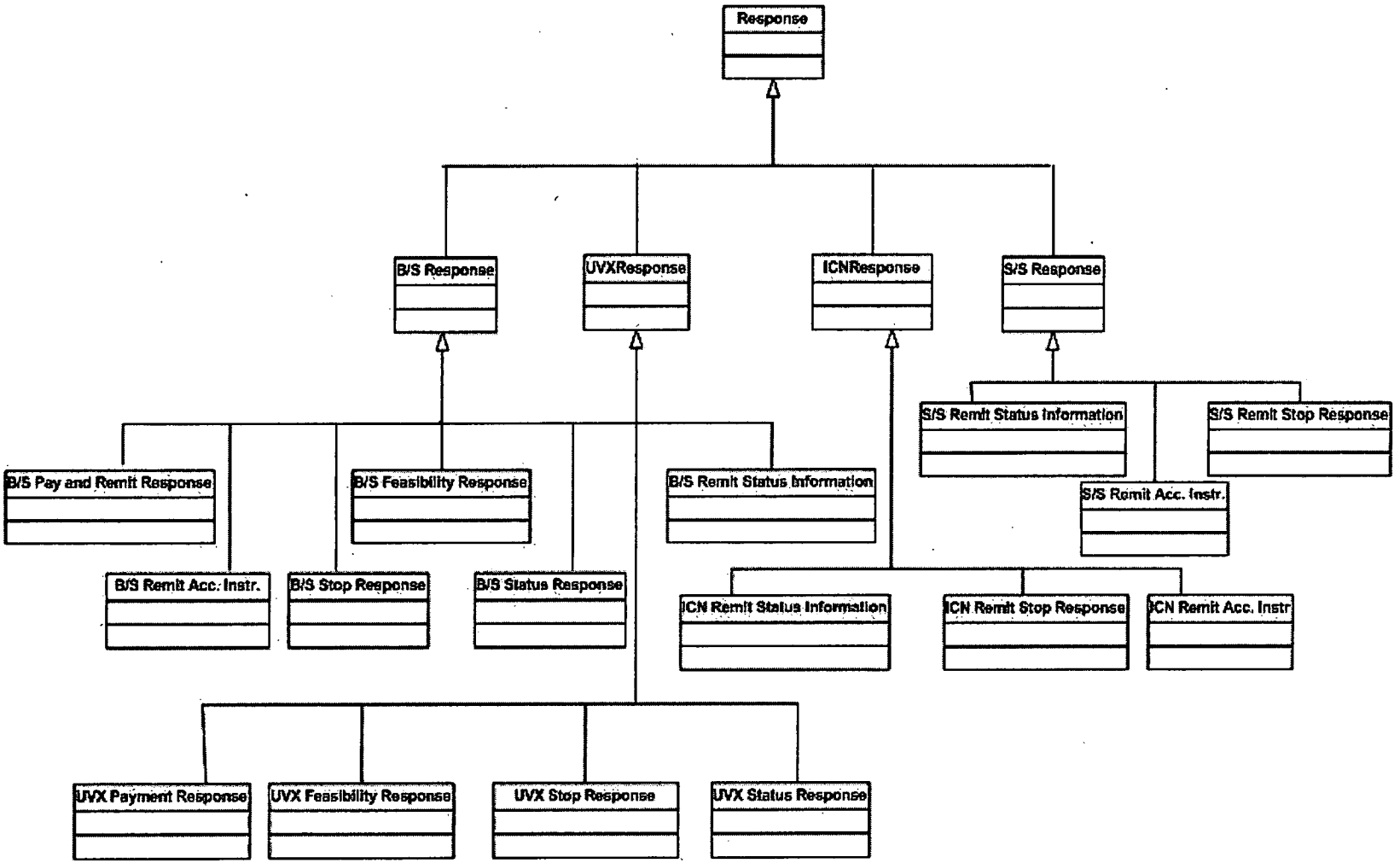


Payment Stop Transaction



8 Class Diagrams




Response
B/S Response
UVXResponse
ICNResponse
S/S Response
S/S Remit Status Information
S/S Remit Stop Response
S/S Remit Acc. Instr.
B/S Pay and Remit Response
B/S Feasibility Response
B/S Remit Status Information
B/S Remit Acc. Instr.
B/S Stop Response
B/S Status Response
ICN Remit Status Information
ICN Remit Stop Response
ICN Remit Acc. Instr
UVX Payment Response
UVX Feasibility Response
UVX Stop Response
UVX Status Response

9 State and Activity Diagrams

10 System Requirements

The "Ideal" column indicates the System Requirements for an ideal system. The "Prototype" column indicates the System Requirements for the Demo.

System Requirement	Description	Prototype	Ideal
Auditing	Audit trail Rudimentary- • Messages will be stored in the Message repository • A Message auditing file will maintain ID's of messages sent, records the sender's and recipients' id's, date and time **as raw data** Extensive • Configurable auditing policy • Web-based administration and reporting • Messages will be stored in the Message repository • A Message auditing file will maintain ID's of messages sent, records the sender's and recipients' id's, date and time, Message delivery confirmation information • Transaction audit will maintain ID's of system transactions, transaction success or failure, date and	Rudimentary	Extensive

	time • Message Queue auditing when the queue is created, accessed or deleted, changing queue properties		
Digital Signature Verification	Digital Signature Verification	Yes	Yes
User Interface	User Interface to the Intercomputer Network	No	Yes
Workflow	Workflow Engine	Yes	Yes
Error Management	Error Handling, Error Logging Basic-Error detection and exception handling in code, exception hierarchy, simple logging of errors Extensive –Error propagation, Error recovery, Error monitoring, reporting	Basic	Extensive
Event Logging	Logging of predefined events	Yes	Yes
Messaging		Yes	Yes
Persistence		Yes	Yes
Guaranteed Delivery		Yes	Yes
Scheduling	To be determined		
Transaction Management		Yes	Yes
Reliability	Accuracy, Availability, Recoverability	No	Yes
Response time	To be determined		
Concurrent Users	Minimum number of concurrent users to be handled	4	100
Throughput	To be determined. Expected to be around 42 million payments per day in the ideal system		

Configurability	Pre-deployment Post-deployment	Yes No	Yes Yes
Compatibility	Compatibility with legacy systems	Yes	Yes
Scalability	Clustering, failover	No	Yes
Standards compliance	UVX, BIPS, InterBIPS JMS, Business Protocols, J2EE	Yes	Yes
Third-party components	Most likely Kenamea for the prototype	Yes	
Platform Support	Unix	Yes	Yes
Resource Limits	CPU usage	5	
External Interfaces	Certification Server, B/S, S/S, PSI	Yes	Yes
Interface formats	To be determined		
Localization		en_US	
Reporting	To be determined		

11 Assumptions

Assumption	Use Case ID
Payment Status Information is sent from PSI	UC_S_UP_FPT
The ICN Transactions can be matched with the Payment System Transactions	UC_S_UP_FPT
The ICN Transactions can be matched with the Buyer System and the Seller System Transactions	UC_S_UP_FPT
Payment Status Information will indicate success or failure of a Payment System Transaction	UC_S_UP_FPT
Payment Stop Request will be defined in UVX	UC_S_UP_FSP
Payment Stop Response will be defined in UVX	UC_S_UP_FSP
Payment Stop Instruction will be defined in UVX	UC_S_UP_FSP
Remittance Stop Response will be defined by Intercomputer	UC_S_UP_FSP
The PSI accepts *Payment Stop Instructions*	UC_S_UP_FSP
The System receives the payment status information from the PSI asynchronously	UC_S_UP_FPS
The System does not access the PSI directly in executing this transaction	UC_S_UP_FPS

12 Terminology

Primary Actor – an actor having a goal requiring an assistance of the system. The system performs a goal **for** the primary actor

Secondary Actor – an actor from which the system needs assistance to satisfy its goals. The system performs a goal **through** the secondary actor. The secondary actor corresponds with the External Entity

External Entity – An entity through which the system does something. This term has been replaced with Secondary Actor.

Success – The term Success as defined in this document indicates that the **use-case goal has been** achieved and the **process** has terminated

Failure – The term Failure as defined in this document indicates that the **use-case goal has not** been achieved and the **process** has terminated

Complete – The term Complete as defined in this document indicates that the **process** has terminated

Non-InterBIPS payment systems – Existing payment systems such as ACH, FedWire, ATM networks, Credit Card etc that are not based on the BIPS specification.

Buyer – the entity that interacts with the B/S. The Buyer entity does not interact with the System.

Seller - – the entity that interacts with the S/S. The Seller entity does not interact with the System.

Buyer's Approver - the entity that will approve Buyer payment requests. Every Buyer will have a designated Buyer's Approver.

Date – Date as mentioned in this document indicates DATETIME

System Date – The current DATETIME

Payment Date – The date on which the payment is to be made as per the BIPS Payment Request.

Processing Date – The date on which the BIPS Payment Request is processed by the Intercomputer Network

Transmission Date – The date on which the payment request is transmitted from the Intercomputer Network to the Payment System Interface